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American Psychiatric Association

PROCEEDINGS

OF THE

American Medico-Psychological Association

AT THE

SIXTY-NINTH ANNUAL MEETING

HELD IN

NIAGARA FALLS, CANADA, JUNE 10-13, 1913

[Vol. 20]

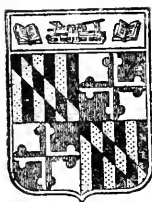


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LIST OF MEMBERS

—OF THE—

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

March, 1914

(This list printed on gummed paper, for mailing purposes, may be obtained from the Secretary. Price 50c.)

A

- 1895 Abbot, E. Stanley, M.D., Assistant Physician McLean Hospital, Waverley, Mass.
- 1907 Abbot, Florence Hale, M.D., Assistant Physician Newton Nervine, 1660 Washington St., West Newton, Mass.
- 1892 Adams, George Smith, M.D., Medical Superintendent Dr. Givens' Sanitarium, Stamford, Conn.
- 1904 Adams, Geo. Sheldon, M.D., Assistant Superintendent South Dakota Hospital for the Insane, Yankton, S. D.
- 1903 Allen, Charles Lewis, M.D. (formerly Pathologist New Jersey State Hospital, Trenton), 605 Pacific Electric Building, Los Angeles, Cal.
- 1912 Allen, Fredrick E., M.D., Assistant Physician Mendocino State Hospital, Talmage, Cal.
- 1893 Allen, Henry D., M.D., Superintendent Invalids Home, Milledgeville, Ga.
- 1913 Allen, J. Berton, M.D., Assistant Physician Central Islip State Hospital, Central Islip, N. Y. (*Associate.*)
- 1912 Allison, W. F., M.D., Superintendent Arlington Heights Sanitarium, Fort Worth, Tex.
- 1913 Alsbaugh, Paul J., M.D., First Assistant Physician Massillon State Hospital, Massillon, O. (*Associate.*)
- 1913 Amsden, George S., M.D., Assistant Physician Bloomingdale Hospital, White Plains, N. Y. (*Associate.*)
- 1912 Andrews, Barton F., M.D., 238 Rugby Ave., Rochester, N. Y. (*Associate.*)
- 1903 Andrews, Clayton G., M.D. (formerly First Assistant Physician Vermont State Hospital, Waterbury, Vt.), Canton, N. Y. (*Associate.*)
- 1894 Anglin, James V., M.D., Medical Superintendent the Provincial Hospital, Fairville, St. John's Co., New Brunswick.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1895 Applegate, Charles F., M. D., Medical Superintendent Mt. Pleasant State Hospital, Mt. Pleasant, Ia.
 1910 Ard, George P., M. D., Assistant Physician State Institution for the Feeble-Minded and Epileptic, Spring City, Pa. (*Associate.*)
 1903 Armstrong, George G., M. D., Senior Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
 1913 Armstrong, Samuel T., M. D., Physician-in-Charge Hillbourne Club, Katonah, N. Y.
 1900 Arthur, Daniel H., M. D., Medical Superintendent Gowanda State Homeopathic Hospital, Collins, N. Y.
 1904 Ashley, Maurice C., M. D., Medical Superintendent Middletown State Homeopathic Hospital, Middletown, N. Y.
 1906 Atkins, Henry S., M. D., Superintendent City Insane Asylum, St. Louis, Mo.
 1910 Athon, W. L., M. D., Superintendent Illinois Southern Hospital for the Insane, Anna, Ill.
 1890 Atwood, Charles E., M. D., 14 East 60th St., New York, N. Y.

B

- 1888 Babcock, J. W., M. D., Medical Superintendent State Hospital for the Insane, Columbia, S. C.
 1911 Baber, Armitage, M. D., Superintendent Dayton State Hospital, Dayton, O.
 1913 Baker, Amos T., M. D., Associate Physician, West Hill, 261st St. & Broadway, New York, N. Y. (*Associate.*)
 1904 Baker, Benjamin W., M. D., Superintendent New Hampshire School for Feeble-Minded Children, Laconia, N. H.
 1899 Baker, Jane Rogers, M. D., Private Sanitarium, The Tower House, West Chester, Pa.
 1896 Baldwin, Henry C., M. D., 126 Commonwealth Ave., Boston, Mass.
 1909 Baldwin, Louis B., M. D., Superintendent University Hospital, University of Minnesota, Minneapolis, Minn.
 1898 Ballintine, Eveline P., M. D., Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)
 1896 Bamford, Thos. E., M. D., 304 Delaware St., Syracuse, N. Y.
 1883 Bancroft, Chas. P., M. D., Medical Superintendent New Hampshire State Hospital, Concord, N. H. (*President, 1908.*)
 1890 Bannister, Henry M., M. D. (formerly Assistant Physician Illinois Eastern Hospital for the Insane), 828 Judson Ave., Evanston, Ill. (*Honorary.*)
 1912 Barber, Bruce B., M. D., Assistant Physician Columbus State Hospital, Columbus, O. (*Associate.*)
 1913 Barlow, Charles A., M. D., Superintendent Second Hospital for Insane, Spencer, W. Va.
 1912 Barnes, E. C., M. D., Assistant Physician Homewood Sanitarium, Guelph, Ont. (*Associate.*)

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- 1909 Barnes, Francis M., Jr., M.D., Assistant Professor Nervous and Mental Diseases, St. Louis University Medical School, 306 Humboldt Bldg., St. Louis, Mo. (*Associate.*)
- 1902 Barnes, H. L., M.D., Superintendent Rhode Island State Sanatorium, Wallum Lake, R. I.
- 1898 Barrett, Albert M., M.D., Professor of Psychiatry and Neurology University Hospital, Ann Arbor, Mich.
- 1912 Barstow, James M., M.D., St. Bernards Hospital, Council Bluffs, Ia.
- 1912 Bartram, Nell W., M.D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1913 Bass, T. B., M.D., Superintendent Texas State Epileptic Colony, Abilene, Tex.
- 1909 Beach, Lena A., M.D., Woman Assistant Physician Cherokee State Hospital, Cherokee, Iowa.
- 1900 Becker, W. F., M.D., Consulting Neurologist Milwaukee County Hospital, 604 Goldsmith Building, Milwaukee, Wis.
- 1909 Beebe, Brooks F., M.D., Superintendent Grandview Sanitarium, 414 Walnut St., Cincinnati, Ohio.
- 1892 Beemer, Nelson H., M.D., Superintendent Mimico Hospital for the Insane, Toronto, Ont.
- 1902 Beling, Christopher C., M.D. (formerly Assistant Physician New Jersey State Hospital, Morris Plains, N. J.), 109 Clinton Ave., Newark, N. J.
- 1913 Bellinger, Clarence H., M.D., Assistant Physician Binghamton State Hospital, Binghamton, N. Y. (*Associate.*)
- 1893 Berkley, Henry J., M.D., 1305 Park Ave., Baltimore, Md.
- 1904 Betts, Joseph B., M.D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1899 Beutler, W. F., M.D., Medical Superintendent Milwaukee Asylum for the Chronic Insane, Wauwatosa, Wis.
- 1913 Beverly, A. Fitzhugh, M.D., Resident Physician Texas School for Defectives, Austin, Tex.
- 1898 Biddle, Thomas, M.D., Superintendent Topeka State Hospital, Topeka, Kansas.
- 1913 Blaisdell, Russell E., M.D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1912 Bloss, James R., M.D., Assistant Physician West Virginia Asylum, Huntington, W. Va. (*Associate.*)
- 1886 Blumer, G. Alder, M.D., Medical Superintendent Butler Hospital, Providence, R. I. (*President, 1903.*)
- 1906 Bolton, James R., M.D., Physician-in-Charge Riverview, Fishkill-on-Hudson, N. Y.
- 1909 Bond, Earl D., M.D., Senior Assistant Physician Pennsylvania Hospital for Insane, Philadelphia, Pa. (*Associate.*)
- 1907 Bond, George F. M., M.D., Proprietor Dr. Bond's House, 960 North Broadway, Yonkers, N. Y.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1892 Bondurant, Eugene D., M.D. (formerly Assistant Superintendent Alabama Bryce Hospital), 166 Conti St., Mobile, Ala.
- 1913 Borden, P. G., M.D., Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1912 Boyd, Wm. A., M.D., 114 W. Franklin St., Baltimore, Md. (*Associate.*)
- 1904 Bradley, Isabel A., M.D., 221 Ash St., Akron, O.
- 1910 Brewster, George F., M.D., Senior Assistant Physician State Homeopathic Hospital, Middletown, N. Y. (*Associate.*)
- 1907 Briggs, L. Vernon, M.D., Physician to Mental Department Boston Dispensary, 64 Beacon Street, Boston, Mass.
- 1913 Brill, A. A., M.D., 55 Central Park W., New York, N. Y.
- 1906 Brochu, M. D., M.D., Superintendent Beauport Asylum for Insane, Beauport, Que.
- 1910 Brooks, Swepson J., M.D., Physician-in-Charge St. Vincent's Retreat, Harrison, N. Y.
- 1913 Brown, G. W., M.D., Superintendent Eastern State Hospital, Williamsburg, Va.
- 1883 Brown, Sanger, M.D., Kenilworth Sanitarium, Kenilworth, Ill.
- 1913 Brown, Sanger, II, M.D., Assistant Physician Bloomingdale Hospital, White Plains, N. Y. (*Associate.*)
- 1912 Brown, Sherman, M.D., Superintendent Kenilworth Sanitarium, Kenilworth, Ill. (*Associate.*)
- 1899 Brown, W. Stuart, M.D., Physician-in-Charge Sanford Hall, Flushing, New York, N. Y.
- 1899 Brownrigg, Albert Edward, M.D., Medical Superintendent Highland Spring Sanatorium, Nashua, N. H.
- 1912 Brundage, Howard M., M.D., Assistant Physician Columbus State Hospital, Columbus, O. (*Associate.*)
- 1908 Brunk, Oliver C., M.D., 405 E. Grace St., Richmond, Va.
- 1891 Brush, Edward N., M.D., Physician-in-Chief and Superintendent Sheppard and Enoch Pratt Hospital, Towson, Md.
- 1912 Bryan, Wm. A., M.D., Assistant Physician Cherokee State Hospital, Cherokee, Ia. (*Associate.*)
- 1895 Bryant, Percy, M.D. (formerly Medical Superintendent Male Department Manhattan (N. Y.) State Hospital), Bowdoin Park, Rahway, N. J.
- 1891 Buchanan, J. M., M.D., Superintendent East Mississippi Insane Hospital, Meridian, Miss.
- 1912 Buckley, Albert C., M.D., Friends' Asylum, Frankford, Philadelphia, Pa. (*Associate.*)
- 1898 Buckley, James M., D.D., LL.D., Morristown, N. J. (*Honorary.*)
- 1902 Bullard, E. L., M.D. (formerly Superintendent Wisconsin State Hospital for the Insane, Mendota, Wis.), Physician-in-Charge Chestnut Lodge Sanitarium, Rockville, Md.
- 1905 Burdick, Charles M., M.D., Senior Assistant Physician Central Islip State Hospital, Central Islip, L. I., N. Y. (*Associate.*)

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- 1913 Burdsall, Elijah S., M.D., Assistant Physician Middletown State Homeopathic Hospital, Middletown, N. Y. (*Associate.*)
- 1890 Burgess, T. J. W., M.D., Medical Superintendent Protestant Hospital for the Insane, New P. O. Box 2280, Special Bag, Montreal, Que. (*President, 1905.*)
- 1909 Burlingame, C. C., M.D., Assistant Superintendent Fergus Falls State Hospital, Fergus Falls, Minn. (*Associate.*)
- 1894 Burnet, Anne, M.D., 513 La Salle St., Wausau, Wis.
- 1913 Burnett, S. Grover, M.D., Medical Superintendent The Burnett Sanitarium, 3100 Euclid Ave., Kansas City, Mo.
- 1890 Burr, C. B., M.D., Medical Director Oak Grove Hospital, Flint, Mich. (*President, 1906.*)
- 1907 Burr, Chas. W., M.D., Professor of Mental Diseases University of Pennsylvania, 1918 Spruce St., Philadelphia, Pa.
- 1901 Busey, A. P., M.D., Superintendent Colorado State Home and Training School for Mental Defectives, Ridge, Colo.
- 1911 Busse, Edward P., M.D., Medical Superintendent Southeastern Hospital for Insane, Cragmont, Madison, Ind.
- 1910 Butterfield, George K., M.D., Assistant Physician State Hospital, Taunton, Mass. (*Associate.*)

C

- 1902 Calder, Daniel H., M.D., Superintendent State Mental Hospital, Provo City, Utah.
- 1907 Callaway, L. H., M.D. (formerly Superintendent State Hospital No. 3), 525 West Arch St., Nevada, Mo.
- 1907 Campbell, Earl H., M.D., Superintendent Upper Peninsula Hospital for the Insane, Newberry, Mich.
- 1899 Campbell, George B., M.D., First Assistant Physician Utica State Hospital, Utica, N. Y.
- 1885 Campbell, Michael, M.D., Medical Superintendent Eastern Hospital for the Insane, Bearden, Tenn.
- 1901 Caples, Byron M., M.D., Medical Superintendent Waukesha Springs Sanitarium, Waukesha, Wis.
- 1909 Capron, Arthur J., M.D., Physician-in-Charge Glenmary Sanitarium, Owego, N. Y.
- 1905 Carey, Harris May, M.D., P. O. Box 83, Odessa, Delaware.
- 1903 Carlisle, Chester Lee, M.D., Senior Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1911 Carpenter, Howard P., M.D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1906 Carriel, Henry B., M.D., Superintendent Jacksonville State Hospital, Jacksonville, Ill.
- 1911 Carroll, Robert S., M.D., Medical Director Highland Hospital, Asheville, N. C.
- 1913 Casamajor, Louis, M.D., 342 W. 56th St., New York, N. Y.

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- 1909 Cavanaugh, William J., M.D., Senior Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1892 Chaddock, Chas. G., M.D., 3705 Delmar Boulevard, St. Louis, Mo.
- 1896 Chagnon, E. Philippe, M.D., Physician to Notre Dame Hospital, 201 Esplanade Ave., Montreal, Que.
- 1880 Channing, Walter, M.D., Channing Sanitarium, Brookline, Mass.
- 1867 Chapin, John B., M.D. (formerly Physician and Superintendent Pennsylvania Hospital for the Insane), (Retired), 244 Main St., Canandaigua, N. Y. (*President, 1889.*)
- 1912 Chapman, Ross McC., M.D., Assistant Physician Binghamton State Hospital, Binghamton, N. Y. (*Associate.*)
- 1883 Chase, Robert H., M.D., Medical Superintendent Friends' Asylum, Frankford, Philadelphia, Pa.
- 1912 Child, Howard T., M.D., Alienist and Physician-in-Charge, U. S. Government Hospital, Leupp, Ariz. (*Associate.*)
- 1895 Chilgren, G. A., M.D., 406½ Jefferson St., Burlington, Iowa.
- 1892 Christian, Edmund A., M.D., Medical Superintendent Pontiac State Hospital, Pontiac, Mich.
- 1913 Christian, Frank L., M.D., Assistant Superintendent New York State Reformatory, Elmira, N. Y.
- 1907 Clark, Charles H., M.D., Superintendent Cleveland State Hospital, Cleveland, Ohio.
- 1910 Clark, Fred P., M.D., Superintendent State Hospital, Stockton, Cal.
- 1898 Clark, Joseph Clement, M.D., Superintendent Springfield State Hospital, Sykesville, Md.
- 1906 Clark, L. Pierce, M.D., Consulting Neurologist Central Islip State Hospital, 84 East 56th St., New York, N. Y.
- 1885 Clarke, Chas. K., M.D., Medical Superintendent Toronto General Hospital, Toronto, Ont.
- 1904 Clarke, Homer E., M.D., Assistant Medical Director, Oak Grove Hospital, Flint, Mich. (*Associate.*)
- 1881 Clouston, Sir Thos. S., M.D., F.R.C.P.E. of LL.D., Edin. and Aber. (formerly Physician-Superintendent Edinburgh Royal Asylum), 26 Heriot Row, Edinburgh, Scotland. (*Honorary.*)
- 1898 Coe, Henry W., M.D., Medical Director Crystal Springs, 516 Selling Building, Portland, Ore.
- 1905 Coggins, Jesse C., M.D., Medical Director The Laurel Sanitarium, Laurel, Md.
- 1913 Cohn, Eugen, M.D., Assistant Superintendent Peoria State Hospital, Peoria, Ill.
- 1913 Cohoon, E. H., M.D., Assistant Physician, State Hospital for Insane, Howard, R. I. (*Associate.*)
- 1901 Coleburn, Arthur B., M.D., Assistant Physician Connecticut Hospital for the Insane, Middletown, Conn. (*Associate.*)
- 1906 Coles, William W., M.D., Keene, N. H.
- 1909 Collier, G. Kirby, M.D., Assistant Physician Craig Colony for Epileptics, Sonyea, N. Y.

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- 1912 Colnon, A. T., M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- 1894 Cook, R. Harvey, M. D., Physician-in-Chief Oxford Retreat, Oxford, Ohio.
- 1894 Cook, Robert G., M. D., Resident Physician Brigham Hall, Canandaigua, N. Y.
- 1892 Copp, Owen, M. D., Physician and Superintendent Pennsylvania Hospital for the Insane, Philadelphia, Pa.
- 1912 Corcoran, David, M. D., Assistant Physician Central Islip State Hospital, Central Islip, N. Y. (*Associate.*)
- 1903 Coriat, Isador H., M. D., 416 Marlborough St., Boston, Mass.
- 1908 Cornell, William B., M. D., 606 Union Trust Building, Baltimore, Md.
- 1902 Cort, Paul Lange, M. D., 144 West State St., Trenton, N. J. (*Associate.*)
- 1902 Cossitt, H. Austin, M. D., 146 West 70th St., New York, N. Y. (*Associate.*)
- 1903 Cotton, Henry A., M. D., Medical Director New Jersey State Hospital, Trenton, N. J.
- 1881 Cowles, Edward, M. D. (formerly Medical Superintendent McLean Hospital, Waverley), Warren Chambers, 419 Boylston St., Boston, Mass. (*President, 1895.*)
- 1912 Craig, Anna, M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1908 Crittenden, Samuel W., M. D., Assistant Superintendent Boston State Hospital, Dorchester Centre, Mass. (*Associate.*)
- 1913 Crooks, Wm. A., M. D., Superintendent Watertown State Hospital, Watertown, Ill.
- 1913 Cross, Albert M., M. D., Assistant Physician State Hospital, Crownsville, Md. (*Associate.*)
- 1892 Crumbacker, W. P., M. D., Medical Superintendent Independence State Hospital, Independence, Ia.
- 1913 Curry, Marcus A., M. D., Assistant Physician New Jersey State Hospital, Morris Plains, N. J. (*Associate.*)
- 1913 Curtis, Barbara, M. D., Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)

D

- 1899 Darling, W. H., M. D., Superintendent The Sanatorium, Hudson, Wis. (*Associate.*)
- 1902 Darnall, Rolland F., M. D., Clinical Director and Assistant Superintendent State Hospital for Nervous Diseases, Little Rock, Ark. (*Associate.*)
- 1913 Davies, George W., M. D., Essex County Hospital for Insane, Cedar Grove, N. J. (*Associate.*)
- 1910 Dearborn, George V. N., M. D., Professor of Physiology Tufts College Medical & Dental Schools, Boston, Mass. Home address Cambridge, Mass.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1909 De Jarnette, J. S., M. D., Medical Superintendent Western State Hospital, Staunton, Va.
- 1899 Delacroix, Arthur C., M. D., Douglas, Alaska. (*Associate.*)
- 1913 DeLaHoyde, T. Grover, M. D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Deming, Ralph, M. D., Assistant Physician Fergus Falls State Hospital, Fergus Falls, Minn. (*Associate.*)
- 1909 Dennes, Blanche, M. D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Devlin, Francis E., M. D., Assistant Superintendent Hospital St. Jean de Dieu, Gamelin, Que. (*Associate.*)
- 1911 De Weese, Cornelius, M. D., Medical Director The Laurel Sanitarium, Laurel, Md.
- 1890 Dewey, Chas. G., M. D., Examining Physician Registration Department City of Boston, 44 Alban St., Dorchester, Boston, Mass.
- 1892 Dewey, Richard, M. D., Physician-in-Charge Milwaukee Sanitarium, Wauwatosa, Wis. (*President, 1896.*) Chicago office, 34 Washington St., Venetian Building, Wednesdays, 11.30 a. m. to 1 p. m.
- 1913 Dexter, Roger, M. D., Assistant Physician Dannemora State Hospital, Dannemora, N. Y. (*Associate.*)
- 1900 Diefendorf, Allen Ross, M. D., 29 College St., New Haven, Conn.
- 1912 Dobson, Wm. M., M. D., Boston State Hospital, Dorchester Centre, Mass. (*Associate.*)
- 1912 Dodge, Percy L., M. D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1907 Doherty, Charles E., M. D., Superintendent Public Hospital for Insane, New Westminster, B. C., Canada.
- 1892 Dold, William E., M. D., Physician-in-Charge River Crest Sanitarium, Astoria, L. I., N. Y. 616 Madison Ave., New York City.
- 1908 Dolloff, Charles H., M. D., First Assistant Physician New Hampshire State Hospital, Concord, N. H. (*Associate.*)
- 1908 Donohoe, George, M. D., Superintendent State Hospital for Inebriates, Knoxville, Iowa.
- 1911 Dorr, Hugh H., M. D., Batesville, O. (*Associate.*)
- 1902 Douglas, A. E., M. D., Superintendent Central Hospital for the Insane, Nashville, Tenn.
- 1907 Downing, Dana Fletcher, M. D., Warren Chambers, 419 Boylston St., Boston, Mass.
- 1894 Drew, Chas. A., M. D., Superintendent City Hospital, Worcester, Mass.
- 1892 Drewry, William F., M. D., Medical Superintendent Central State Hospital, Petersburg, Va. (*President, 1910.*)
- 1913 Dunning, Ralph H., M. D., St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- 1896 Dunton, Wm. Rush, Jr., M. D., First Assistant Physician Sheppard and Enoch Pratt Hospital, Towson, Md.
- 1912 Durgin, Delmer D., M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)

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- 1899 Durham, Albert, M. D., Assistant Physician Bloomingdale Hospital, White Plains, N. Y. (*Associate.*)
 1912 Dysart, R. J., M. D., Assistant Physician Northern Hospital for Insane, Winnebago, Wis. (*Associate.*)

E

- 1909 Earl, H. D., M. D., First Assistant Physician North Dakota State Hospital, Jamestown, N. D.
 1912 Eastman, Frederic C., M. D., 1268 Bergen St., Brooklyn, N. Y.
 1912 Eaton, Richard G., M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
 1896 Edenharter, Geo. F., M. D., Medical Superintendent Central Indiana Hospital for the Insane, Indianapolis, Ind.
 1893 Edgerly, J. Frank, M. D., 1 Mt. Vernon Terrace, Newtonville, Mass.
 1894 Edwards, John B., M. D. (formerly Medical Superintendent Wisconsin State Hospital), 311 Goldsmith Building, Milwaukee, Wis.
 1913 Eirley, Clara, M. D., State Hospital, Mt. Pleasant, Ia. (*Associate.*)
 1899 Elliott, Hiram, M. D. (formerly Superintendent Marshall Sanitarium), 58 Willett St., Albany, N. Y.
 1897 Elliott, Robert M., M. D., Medical Superintendent Willard State Hospital, Willard, N. Y.
 1913 Emerick, E. J., M. D., Superintendent Institution for Feeble-Minded, Columbus, O.
 1913 Emerson, Ernest B., M. D., Medical Director State Hospital, Bridgewater, Mass.
 1892 Emerson, Justin E., M. D., Attending Physician St. Joseph's Retreat, Dearborn, Mich.; Attending Neurologist Harper Hospital and Children's Free Hospital, Detroit, 128 Henry St., Detroit, Mich.
 1909 English, W. M., M. D., Medical Superintendent Hospital for Insane, Hamilton, Ont.
 1893 Evans, B. D., M. D., Medical Director New Jersey State Hospital, Morris Plains, N. J.
 1908 Everett, Edward A., M. D., Physician-in-Charge Cornwall Sanitarium, Cornwall-on-Hudson, N. Y.
 1912 Ewing, Halle Laura, M. D., Assistant Physician Nebraska Hospital for Insane, Lincoln, Neb. (*Associate.*)
 1892 Eyman, H. C., M. D., Medical Superintendent Massillon State Hospital, Massillon, Ohio.

F

- 1907 Faison, W. W., M. D., Superintendent State Hospital, Goldsboro, N. C.
 1912 Faxon, Dora W., M. D., Taunton State Hospital, Taunton, Mass. (*Associate.*)
 1912 Feldstein, Bernard, M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1898 Felty, John C., M. D., Assistant Physician New Jersey State Hospital, Trenton, N. J. (*Associate.*)
- 1907 Fernald, Guy G., M. D., Physician Massachusetts Reformatory, Concord Junction, Mass.
- 1895 Fernald, Walter E., M. D., Superintendent Massachusetts School for the Feeble-Minded, Waverley, Mass.
- 1909 Ferris, Albert Warren, M. D., State Reservation Commission, Saratoga Springs, N. Y.
- 1913 Finlayson, Alan D., M. D., Assistant Physician Warren State Hospital, Warren, Pa. (*Associate.*)
- 1912 Fish, Drury L., M. D., Kankakee State Hospital, Hospital, Ill. (*Associate.*)
- 1907 Fisher, E. Moore, M. D., Assistant Physician New Jersey State Hospital, Morris Plains, N. J. (*Associate.*)
- Fisher, Theodore W., M. D. (formerly Medical Superintendent Boston State Hospital), Boston, Mass.
- 1892 Fitzgerald, John F., M. D., General Medical Superintendent King's County Hospital, Brooklyn, N. Y.
- 1907 Fitzgerald, John G., M. D., Associate Professor Bacteriology University of California, Berkeley, Cal. (*Associate.*)
- 1912 Fletcher, Christopher, M. D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1899 Flint, Austin, M. D., Consulting Physician Manhattan State Hospital, 118 E. 19th St., New York, N. Y.
- 1900 Flood, Everett, M. D., Superintendent Monson State Hospital, Palmer, Mass.
- 1912 Foley, Edward A., M. D., Assistant Physician Jacksonville State Hospital, Jacksonville, Ill. (*Associate.*)
- 1911 Fordyce, O. O., M. D., Superintendent Athens State Hospital, Athens, O.
- 1913 Forster, James M., M. D., Medical Superintendent Hospital for Insane, Toronto, Ont.
- 1897 Franklin, Charles M., M. D. (formerly First Assistant Physician Sheppard and Enoch Pratt Hospital), 5 East Preston St., Baltimore, Md.
- 1908 Franz, Shepherd I., A. B., Ph. D., Psychologist and Scientific Director, Government Hospital for Insane, Washington, D. C. (*Honorary.*)
- 1913 Freeman, George H., M. D., Superintendent State Hospital for Inebriates, Willmar, Minn.
- 1897 French, Edward, M. D., Superintendent Medfield State Asylum, Harding, Mass.
- 1899 Frost, Henry P., M. D., Superintendent Boston State Hospital, Dorchester Centre, Mass.
- 1900 Fry, Frank R., M. D., Professor of Neurology Medical Department Washington University; Consulting Neurologist to St. Louis Insane Asylum, Humboldt Building, St. Louis, Mo.

LIST OF MEMBERS.

- 1913 Fuller, Daniel H., M. D., State Board of Insanity, Boston, Mass.
- 1902 Fuller, Solomon Carter, M. D., Pathologist Westborough State Hospital, Westborough, Mass. (*Associate.*)
- 1908 Funkhouser, Edgar B., M. D., Second Assistant Physician New Jersey State Hospital, Trenton, N. J. (*Associate.*)

G

- 1911 Gale, George Bancroft, M. D., Medical Director Bancroft Health Resort, Butler, N. J.
- 1913 Gardner, Wm. E., M. D., Superintendent Central State Hospital, Lakeland, Ky.
- 1900 Garlick, J. H., M. D., Assistant Physician Western State Hospital, Staunton, Va. (*Associate.*)
- 1905 Garrett, R. Edward, M. D., Assistant Physician Maryland Hospital for the Insane, Catonsville, Md. (*Associate.*)
- 1909 George, John Cecil, M. D., Assistant Superintendent Dayton State Hospital, Dayton, Ohio. (*Associate.*)
- 1912 Gesregen, Wm. E., M. D., Resident Physician Belle Mead Farm Colony and Sanatorium, Belle Mead, N. J.
- 1909 Gillespie, Edward, M. D., Senior Assistant Physician Binghamton State Hospital, Binghamton, N. Y. (*Associate.*)
- 1907 Gillespie, Robert L., M. D., Medical Director Crystal Springs Sanitarium, Portland, Ore.
- 1912 Gilliam, Charles F., M. D., Superintendent Columbus State Hospital, Columbus, O.
- 1913 Ginsburg, Samuel, M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- 1893 Givens, A. J., M. D., Proprietor Dr. Givens' Sanitarium, Stamford, Conn.
- 1895 Givens, John W., M. D., Medical Superintendent Northern Idaho Insane Asylum, Orofino, Idaho.
- 1910 Glascock, Alfred, M. D., Assistant Physician Government Hospital for the Insane, Washington, D. C. (*Associate.*)
- 1903 Goodwill, V. L., M. D., and C. M., Medical Superintendent Falconwood Hospital for the Insane, Charlottetown, P. E. I.
- 1912 Gordon, Alfred, M. D., 1812 Spruce St., Philadelphia, Pa.
- 1912 Gorrill, George W., M. D., First Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1906 Gorst, Charles, M. D., Superintendent State Hospital for the Insane, Mendota, Wis.
- 1894 Gorton, Eliot, M. D., Fair Oaks Sanatorium, 26 New England Ave., Summit, N. J.
- 1898 Goss, Arthur V., M. D., Superintendent Taunton State Hospital, Taunton, Mass.
- 1912 Goss, H. L., M. D., Assistant Physician Osawatomie State Hospital, Osawatomie, Kans. (*Associate.*)

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1886 Granger, Wm. D., M. D., Vernon House, Bronxville, N. Y.
- 1905 Green, Edward M., M. D., Clinical Director Georgia State Sanitarium, Milledgeville, Ga.
- 1909 Greene, Edward C., M. D., Norfolk State Hospital, Wrentham, Mass. (*Associate.*)
- 1910 Greene, James L., M. D., Superintendent State Hospital for Nervous Diseases, Little Rock, Ark.
- 1908 Gregory, Menas S., M. D., Resident Alienist Bellevue Hospital, New York, N. Y.
- 1913 Griffin, D. W., M. D., Superintendent Oklahoma Hospital for Insane, Norman, Okla.
- 1913 Groll, Edward W., M. D., Assistant Physician Binghamton State Hospital, Binghamton, N. Y. (*Associate.*)
- 1913 Groom, Wirt C., M. D., Assistant Physician Willard State Hospital, Willard, N. Y. (*Associate.*)
- 1910 Guibord, Alberta S. B., M. D., 409 Huntington Ave., Boston, Mass.
- 1900 Gundry, Alfred T., M. D., Medical Director The Gundry Sanitarium, Catonsville, Md.
- 1908 Gundry, Lewis H., M. D., Superintendent Relay Sanitarium, Relay, Baltimore Co., Md.
- 1892 Gundry, Richard F., M. D., Medical Director and Proprietor the Richard Gundry Home, Harlem Lodge, Catonsville, Md.
- 1899 Guthrie, L. V., M. D., Superintendent West Virginia Asylum, Huntington, W. Va.

H

- 1912 Haight, Julius E., M. D., Assistant Physician Utica State Hospital, Utica, N. Y. (*Associate.*)
- 1891 Hall, G. Stanley, Ph. D., LL. D., President Clark University, Worcester, Mass. (*Honorary.*)
- 1886 Hall, Henry C., M. D., Assistant Physician Butler Hospital, Providence, R. I. (*Associate.*)
- 1911 Halsey, Luther M., M. D., Chairman Medical Committee, New Jersey State Hospital, Williamstown, N. J.
- 1899 Hamilton, Arthur S., M. D., Instructor in Nervous and Mental Diseases and Neuro-pathology, College of Medicine and Surgery, University of Minnesota, 513 Pillsbury Building, Minneapolis, Minn.
- 1907 Hamilton, Gilbert V., M. D., Montecito, Cal.
- 1907 Hamilton, Samuel W., M. D., Senior Assistant Physician Utica State Hospital, Utica, N. Y.
- 1912 Hammers, James S., M. D., Assistant Physician State Hospital, Danville, Pa. (*Associate.*)
- 1908 Hammond, Frederick S., M. D., Assistant Physician and Pathologist, New Jersey State Hospital, Trenton, N. J. (*Associate.*)
- 1908 Hammond, Graeme M., M. D., Professor of Mental Diseases, 60 West 56th St., New York, N. Y.

LIST OF MEMBERS.

- 1893 Hancker, W. H., M.D., Medical Superintendent Delaware State Hospital, Farnhurst, Del.
- 1906 Hanes, Edward L., M.D., 748 Main St., E., Rochester, N. Y.
- 1913 Hanson, Wm. T., M.D., State Board of Insanity, Arlington, Mass. (*Associate.*)
- 1904 Harding, George T., Jr., M.D. (Neurologist to Grant Hospital, St. Anthony's Hospital and St. Clair Hospital), 318 E. State St., Columbus, O.
- 1891 Harmon, F. W., M.D., Medical Superintendent Longview Hospital, Cincinnati, Ohio.
- 1894 Harrington, Arthur H., M.D., Superintendent State Hospital for Insane, Howard, R. I.
- 1913 Harrington, John J., M.D., Assistant Physician State Hospital, Central Islip, N. Y. (*Associate.*)
- 1913 Harris, George F., M.D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1899 Harris, Isham G., M.D., Superintendent Mohansic State Hospital, Yorktown, N. Y.
- 1888 Harrison, Daniel A., M.D., Breezehurst Terrace, Whitestone, L. I., N. Y.
- 1913 Hasking, Arthur P., M.D., Official Examiner of Indigent Insane, Hudson Co., Jersey City, N. J.
- 1910 Hatch, F. W., M.D., General Superintendent of California State Hospitals, Sacramento, Cal.
- 1913 Hatcher, George E., M.D., First Assistant Physician Central Hospital for the Insane, near Nashville, Tenn. (*Associate.*)
- 1894 Hattie, W. H., M.D., Medical Superintendent Nova Scotia Hospital, Halifax, N. S.
- 1899 Haviland, C. Floyd, M.D., First Assistant Physician Kings Park State Hospital, Kings Park, N. Y.
- 1908 Hawke, W. W., M.D., "The Eyrie," Clifton Heights, Delaware Co., Pa.
- 1911 Hecht, D'Orsay, M.D., Monroe Building, cor. Michigan Ave. & Monroe St., Chicago, Ill.
- 1910 Hedin, Carl J., M.D., Superintendent Maine School for Feeble-Minded, W. Pownal, Me.
- 1912 Helmer, Ross D., M.D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1913 Henderson, Estelle H., M.D., Southwestern State Hospital, Marion, Va. (*Associate.*)
- 1912 Henry, Hugh Carter, M.D., First Assistant Physician Central State Hospital, Petersburg, Va. (*Associate.*)
- 1911 Henschel, Louis K., M.D., Senior Assistant Physician and Pathologist New Jersey State Hospital, Morris Plains, N. J. (*Associate.*)
- 1911 Herring, Arthur P., M.D., Secretary State Lunacy Commission, 330 North Charles St., Baltimore, Md.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1894 Heyman, Marcus B., M. D., First Assistant Physician Central Islip State Hospital, Central Islip, L. I., N. Y.
- 1911 Hickling, D. Percy, M. D., Visiting Physician Washington Asylum and Jail, 1304 Rhode Island Ave., N. W., Washington, D. C.
- 1883 Hill, Chas. G., M. D., Physician-in-Chief Mt. Hope Retreat, Baltimore, Md. (*President, 1907.*)
- 1883 Hill, Gershom H., M. D., Superintendent "The Retreat," Des Moines, Ia.
- 1899 Hill, S. S., M. D., Superintendent State Asylum for the Chronic Insane, Wernersville, Pa.
- 1897 Hills, Frederick L., M. D., Superintendent of Eastern Maine Insane Hospital, Bangor, Me.
- 1886 Hinckley, L. S., M. D. (formerly Medical Superintendent Essex County Hospital), 182 Clinton Ave., Newark, N. J.
- 1913 Hinton, Ralph T., M. D., Superintendent Elgin State Hospital, Elgin, Ill.
- 1900 Hirsch, Wm., M. D., Neurologist to the German Poliklinik, 52 E. Sixty-fourth St., New York, N. Y.
- 1900 Hitchcock, Chas. W., M. D., Attending Neurologist Harper Hospital, 270 Woodward Ave., Detroit, Mich.
- 1903 Hobbs, Alfred T., M. D., Superintendent Homewood Sanitarium, Guelph, Ont.
- 1895 Hoch, August, M. D., Director Psychiatric Institute, Ward's Island, New York, N. Y.
- 1904 Hoch, Theodore A., M. D., Assistant Physician McLean Hospital, Waverley, Mass. (*Associate.*)
- 1900 Holley, Erving, M. D., Assistant Physician Long Island State Hospital, Brooklyn, N. Y. (*Associate.*)
- 1913 Horsman, Hiram L., M. D., Assistant Physician Worcester State Asylum, Worcester, Mass. (*Associate.*)
- 1913 Hotchkiss, W. M., M. D., Superintendent State Hospital for Insane, Jamestown, N. Dak.
- 1894 Houston, John A., M. D., Medical Superintendent Northampton State Hospital, Northampton, Mass.
- 1894 Howard, A. B., M. D. (formerly Medical Superintendent Cleveland State Hospital), 736 Rose Building, Cleveland, Ohio.
- 1888 Howard, Eugene H., M. D., Medical Superintendent Rochester State Hospital, Rochester, N. Y.
- 1894 Howard, Herbert B., M. D., Superintendent Peter Brent Brigham Hospital, 697 Huntington Ave., Boston, Mass.
- 1912 Hubbard, O. S., M. D., Assistant Superintendent Kansas State Hospital for Epileptics, Parsons, Kans. (*Associate.*)
- 1867 Hughes, Chas. H., M. D., 3858 West Pine Boulevard, St. Louis, Mo.
- 1907 Hummer, Henry R., M. D., Superintendent Asylum for Insane Indians, Canton, South Dakota.
- 1899 Hun, Henry, M. D., Albany, N. Y. (*Honorary.*)

LIST OF MEMBERS.

- 1894 Hurd, Arthur W., M. D., Medical Superintendent Buffalo State Hospital, Buffalo, N. Y.
- 1879 Hurd, Henry M., M. D., Secretary Johns Hopkins Hospital, 1063 Calvert Building, Baltimore, Md. (*President, 1899.*)
- 1897 Hutchings, Richard H., M. D., Medical Superintendent St. Lawrence State Hospital, Ogdensburg, N. Y.
- 1899 Hutchinson, Anna E., M. D., Woman Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- 1885 Hutchinson, Henry A., M. D., Medical Superintendent The Dixmont Hospital for the Insane, Dixmont, Pa.

I

- 1901 Inch, Geo. Franklin, M. D., First Assistant Physician Kalamazoo State Hospital, Kalamazoo, Mich. (*Associate.*)
- 1913 Ingram, Robert, M. D., Neurologist Cincinnati Hospital, Cincinnati, O.
- 1912 Isham, Mary Keyt, M. D., Assistant Physician Columbus State Hospital, Columbus, O. (*Associate.*)

J

- 1913 Jackson, J. Allen, M. D., Chief Resident Physician Philadelphia Hospital for Insane, Philadelphia, Pa.
- 1912 Jacobs, Wilma H., M. D., Kankakee State Hospital, Hospital, Ill. (*Associate.*)
- 1913 Jacoby, J. Ralph, M. D., 54 West 88th St., New York, N. Y.
- 1908 Jelliffe, Smith Ely, M. D., Visiting Neurologist City Hospital, 64 West 56th St., New York, N. Y.
- 1903 Jelly, Arthur C., M. D., 10 Arlington St., Boston, Mass.
- 1909 Jones, L. M., M. D., Superintendent Georgia State Sanitarium, Mill-edgeville, Ga.
- 1909 Jordan, M. M., M. D., Assistant Physician Westborough State Hospital, Westborough, Mass. (*Associate.*)

K

- 1906 Karpas, Morris J., M. D., Psychopathic Pavilion, Bellevue Hospital, New York, N. Y. (*Associate.*)
- 1872 Kellogg, Theo. H., M. D., Riverdale Lane and Albany Postroad, Riverdale, New York, N. Y.
- 1913 Kelly, Wm. E., M. D., Assistant Physician Middletown State Homeopathic Hospital, Middletown, N. Y. (*Associate.*)
- 1890 Keniston, J. M., M. D., Assistant Physician Connecticut Hospital for the Insane, Middletown, Conn. (*Associate.*)
- 1912 Kern, W. B., M. D., Superintendent Nebraska State Hospital, Hastings, Neb.
- 1910 Kieb, Raymond F. C., M. D., Superintendent Matcawan State Hospital, Beacon, N. Y. (*Associate.*)
- 1890 Kilbourne, Arthur F., M. D., Medical Superintendent Rochester State Hospital, Rochester, Minn. (*President, 1909.*)

- 1895 Kindred, J. J., M. D., Proprietor and Consulting Physician of the River Crest Sanitarium, Astoria, L. I., N. Y.
- 1913 Kineon, G. G., M. D., Superintendent Ohio Hospital for Epileptics, Gillipolis, O.
- 1910 King, Edward W., M. D. (formerly Superintendent Mendocino State Hospital, Talmage, Cal.), 3445 Sacramento St., San Francisco, Cal.
- 1912 King, Florence A., M. D., Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1908 King, George W., M. D., County Physician, Court House, 239½ Second St., Jersey City, N. J.
- 1910 King, John C., M. D., Superintendent Southwestern State Hospital, Marion, Va.
- 1912 King, Robert, M. D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1901 Kinney, C. Spencer, M. D., Proprietor Easton Sanitarium, Easton, Pa.
- 1910 Kirby, George H., M. D., Director Clinical Psychiatry Manhattan State Hospital, Ward's Island, New York, N. Y.
- 1905 Kline, George M., M. D., Superintendent Danvers State Hospital, Hathorne, Mass.
- 1900 Klopp, Henry I., M. D., Superintendent State Homeopathic Hospital, Allentown, Pa.
- 1899 Knapp, John Rudolph, M. D., Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y. (*Associate.*)
- 1913 Knight, Arthur Clyde, M. D., Superintendent Montana State Hospital, Warm Springs, Mont.
- 1911 Knopf, S. Adolphus, M. D., Professor of Phthisio Therapy, New York Post Graduate Medical School, 16 West 95th St., New York, N. Y.
- 1894 Knowlton, W. M., M. D., Channing Sanitarium, Brookline, Mass.
- 1902 Kuhlman, Helene J. C., M. D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1907 Kuhn, William F., M. D. (formerly Superintendent State Hospital No. 2, St. Joseph, Mo.), Room 1025 Rialto Building, Kansas City, Mo.

L

- 1901 Lamb, Robert B., M. D., 447 Third Ave., Troy, N. Y.
- 1900 La Moure, Chas. T., M. D., Superintendent Connecticut School for Imbeciles, Lakeville, Conn.
- 1911 La Moure, Howard A., M. D., Superintendent Colorado State Insane Asylum, Pueblo, Col.
- 1908 Landers, George B., M. D., First Assistant Physician Brattleboro Retreat, Brattleboro, Vt. (*Associate.*)
- 1912 Lane, Arthur G., M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)

LIST OF MEMBERS.

- 1892 Lane, Edward B., M. D., Resident Physician Adams Nervine Asylum, 419 Boylston St., Boston, Mass.
- 1913 Lang, Walter E., M. D., Senior Assistant Physician Homeopathic State Hospital, Allentown, Pa. (*Associate.*)
- 1903 Langdon, F. W., M. D., Professor of Psychiatry, University of Cincinnati; Consulting Neurologist to Cincinnati Hospital; Medical Director Cincinnati Sanitarium, 4003 Rose Hill Ave., Cincinnati, Ohio.
- 1912 Langdon, Fletcher, M. D., 4003 Rose Hill Ave., Cincinnati, O. (*Associate.*)
- 1906 Laughlin, Charles E., M. D., Superintendent Southern Indiana Hospital for the Insane, Evansville, Indiana.
- 1907 Lawlor, Fred E., M. D., Assistant Physician Nova Scotia Hospital, Halifax, N. S. (*Associate.*)
- 1882 Lawton, Shailer E., M. D., Medical Superintendent Brattleboro Retreat, Brattleboro, Vt.
- 1911 Leader, Pauline M., M. D., Woman Physician Clarinda State Hospital, Clarinda, Iowa. (*Associate.*)
- 1912 Leahy, Sylvester R., M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1901 Leak, Roy L., M. D., 628 Gurney Building, Syracuse, N. Y. (*Associate.*)
- 1912 Leavitt, William, M. D., Assistant Physician Central Islip State Hospital, Central Islip, N. Y. (*Associate.*)
- 1913 Leonard, Edward F., M. D., 3501 N. Hermitage Ave., Chicago, Ill. (*Associate.*)
- 1913 Levin, Hyman L., M. D., St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- 1900 Lewis, J. M., M. D. (formerly Superintendent Cleveland State Hospital), 436 Rose Bldg., Cleveland, Ohio.
- 1910 Lindsay, S. C., M. D., Assistant Physician State Hospital, Independence, Iowa. (*Associate.*)
- 1913 Littlewood, Thomas, M. D., Assistant Superintendent Gardner State Colony, Gardner, Mass. (*Associate.*)
- 1899 Logie, Benjamin Rush, M. D., Washington, D. C.
- 1892 Long, Oscar R., M. D., Medical Superintendent Ionia State Hospital, Ionia, Mich.
- 1909 Long, T. L., M. D., Assistant Physician Cherokee State Hospital, Cherokee, Iowa.
- 1911 Lorenz, William F., M. D., First Assistant Physician Wisconsin State Hospital for Insane, Mendota, Wis. (*Associate.*)
- 1909 Love, George R., M. D., Superintendent Toledo State Hospital, Toledo, Ohio.
- 1913 Lowe, Charles R., M. D., Jacksonville State Hospital, Jacksonville, Ill. (*Associate.*)
- 1903 Ludlum, Seymour DeWitt, M. D., Merion, Pa. (*Associate.*)
- 1912 Lustig, Daniel D., M. D., 146 Grant Ave., San Francisco, Cal.

- 1913 Lyon, Charles G., M. D., Superintendent Dr. Lyon's Sanitarium, Binghamton, N. Y.
 1882 Lyon, Samuel B., M. D., "Shadyside," Prospect St. and Howard Place, White Plains, N. Y.

M

- 1892 Mabon, William, M. D., Superintendent and Medical Director Manhattan State Hospital, Ward's Island, New York, N. Y.
 1874 MacDonald, Carlos F., M. D., 15 E. Forty-eighth St., New York, N. Y. (*President, 1914.*)
 1913 Mack, Clifford W., M. D., Agnew State Hospital, Agnew, Cal. (*Associate.*)
 1907 Mackin, Charles M., M. D., Assistant Physician Clarinda State Hospital, Clarinda, Iowa. (*Associate.*)
 1906 Mackintosh, J. A., M. D., Wilson City, Bahamas.
 1912 MacNaughton, Peter, M. D., Assistant Superintendent Hospital for Insane, Hamilton, Ont. (*Associate.*)
 1902 Macphail, Andrew, M. D., M. R. C. S., Eng., L. R. C. P., London; Professor of Pathology and Bacteriology University of Bishop's College, Montreal; Consulting Pathologist to Protestant Hospital for the Insane, Montreal, 216 Peel St., Montreal, Que.
 1912 MacPhee, John J., M. D., 124 W. 77th St., New York, N. Y.
 1909 McAllaster, Benjamin R., M. D. (formerly Superintendent State Hospital for Insane, Jamestown, N. D.), King City, Mo.
 1894 McBride, James H., M. D., 489 Bellefontaine St., Pasadena, Cal.
 1909 McCafferty, Emit L., M. D., Assistant Superintendent Mt. Vernon Hospital, Mt. Vernon, Ala.
 1910 McCampbell, John, M. D., Superintendent State Hospital, Morganton, N. C.
 1909 McCarthy, D. J., M. D., Professor of Medical Jurisprudence University of Pennsylvania and Woman's Medical College, Philadelphia, Pa.
 1903 McDonald, William, M. D., 188 Blackstone Boulevard, Providence, R. I.
 1909 McGaffin, Charles Gibson, M. D., Pathologist and Assistant Physician Kings Park State Hospital, Kings Park, N. Y.
 1911 McKay, James G., M. D., Assistant Physician Hospital for Insane, New Westminster, B. C. (*Associate.*)
 1905 McKelway, John Irvine, M. D., Deputy Medical Examiner, Bureau of Deportation, Room 145A, 1 Madison Ave., New York, N. Y.
 1907 McKinniss, Clyde R., M. D., Chief Physician State Hospital for Insane, Department for Men, Norristown, Pa.
 1897 Macy, Wm. Austin, M. D., Medical Superintendent Kings Park State Hospital, Kings Park, L. I., N. Y.
 1912 Mahan, H. P., M. D., Assistant Physician Kansas State Hospital for Epileptics, Parsons, Kans. (*Associate.*)

LIST OF MEMBERS.

- 1912 Malberti, José A., M. D., Malberti's Sanitarium, Havana, Cuba.
- 1898 Mallon, Peter S., M. D., Assistant Physician New Jersey State Hospital, Morris Plains, N. J.
- 1900 Manton, Walter P., M. D., Gynecologist Eastern and Northern Michigan Asylums; Consulting Gynecologist St. Joseph's Retreat, 32 Adams Ave., West, Detroit, Mich.
- 1911 Matthews, Adelbert C., M. D., First Assistant Physician Napa State Hospital, Napa, Cal. (*Associate.*)
- 1912 Matzinger, Herman G., M. D., 90 Soldier's Place, Buffalo, N. Y.
- 1904 Maxfield, Geo. H., M. D., Soldiers' Home, Chelsea, Mass. (*Associate.*)
- 1912 May, Herman F., M. D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y. (*Associate.*)
- 1910 May, James V., M. D., Medical Member State Hospital Commission, Albany, N. Y.
- 1894 Mayberry, Chas. B., M. D., Superintendent Hospital for the Insane of the Central Poor District of Luzerne County, Retreat, Luzerne Co., Pa.
- 1902 Mayer, Edward E., M. D., Clinical Professor of Neurology University of Pittsburgh, Keenan Bldg., Pittsburgh, Pa.
- 1893 Mead, Leonard C., M. D., Medical Superintendent South Dakota Hospital for the Insane, Yankton, S. D.
- 1912 Mellen, Samuel F., M. D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Mellus, Edward, M. D., Superintendent Newton Nervine, West Newton, Mass.
- 1891 Meredith, Hugh B., M. D., Medical Superintendent State Hospital for the Insane, Danville, Pa.
- 1912 Merriman, Willis E., M. D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1893 Meyer, Adolf, M. D., Professor of Psychiatry Johns Hopkins University, 1012 North Calvert St., Baltimore, Md.
- 1907 Meyers, Donald Campbell, M. D., Superintendent Dr. Meyers' Hospital, 72 Heath St., Toronto, Canada.
- 1904 Miller, Henry W., M. D., Superintendent Maine Insane Hospital, Augusta, Me.
- 1893 Mills, Chas. K., M. D., Professor of Neurology University of Pennsylvania, 1909 Chestnut St., Philadelphia, Pa.
- 1903 Mills, Wesley, A. M., M. D., Professor of Physiology McGill University, Montreal, Que. (*Honorary.*)
- 1907 Millsbaugh, Daniel T., M. D., Superintendent "Riverlawn," 47 Totowa Ave., Paterson, N. J.
- 1899 Mitchell, H. W., M. D., Superintendent Warren State Hospital, Warren, Pa.
- 1912 Mitchell, John C., M. D., Superintendent Hospital for the Insane, Brockville, Ont.
- 1908 Mitchell, Roy E., M. D., Parker Building, Eau Claire, Wis.

- 1911 Mobley, John W., M. D., Assistant Physician State Sanitarium, Mill-edgeville, Ga. (*Associate.*)
- 1905 Moher, Thomas J., M. D., Medical Superintendent Hospital for In-sane, Cobourg, Ont.
- 1903 Montgomery, Wm. H., M. D., Senior Assistant Physician Willard State Hospital, Willard, N. Y. (*Associate.*)
- 1906 Moody, G. H., M. D., Superintendent Dr. Moody's Sanitarium, 315 Brackenridge Ave., San Antonio, Texas.
- 1912 Moore, Arthur S., M. D., Assistant Physician Middletown State Hos-pital, Middletown, N. Y. (*Associate.*)
- 1896 Morel, Jules, M. D., Medical Superintendent State Asylum; Com-missioner in Lunacy, 56 Boulevard Leopold, Ghent, Belgium. (*Honorary.*)
- 1913 Morris, John N., M. D., Springfield State Hospital, Sykesville, Md. (*Associate.*)
- 1913 Morse, Mary E., M. D., Worcester State Hospital, Worcester, Mass. (*Associate.*)
- 1899 Moseley, Wm. B., M. D., Assistant Physician Kings County Hospital, Brooklyn, N. Y. (*Associate.*)
- 1893 Mosher, J. Montgomery, M. D., 170 Washington Ave., Albany, N. Y.
- 1881 Motet, A. M., M. D., 161 Rue de Charonne, Paris, France. (*Hon-orary.*)
- 1889 Moulton, A. R., M. D., Senior Assistant Physician Pennsylvania Hos-pital for the Insane, Philadelphia, Pa.
- 1886 Munson, James D., M. D., Medical Superintendent Northern Michigan Asylum, Traverse City, Mich.
- 1907 Munson, James F., M. D., Resident Pathologist Craig Colony for Epileptics, Sonyea, N. Y.
- 1909 Murdock, J. Morehead, M. D., Superintendent State Institution Feeble-Minded of Western Pennsylvania, Polk, Pa.
- 1912 Myers, Glenn E., M. D., Psychiatric Institute, Ward's Island, New York, N. Y. (*Associate.*)

N

- 1910 Neely, James J., M. D., Superintendent Western Hospital for Insane, Bolivar, Tenn.
- 1896 Neff, Irwin H., M. D., Superintendent Foxborough State Hospital, Foxborough, Mass.
- 1913 Neff, Mary Lawson, M. D., Highland Park, Des Moines, Ia.
- 1905 Nevin, Ethan A., M. D., Superintendent Custodial Asylum, Newark, N. Y.
- 1913 Nevin, John, M. D., North Hudson Hospital, Jersey City, N. J.
- 1913 Nevitt, C. A., M. D., Superintendent Elmwood Sanitarium, Lexington, Ky.
- 1900 Nichols, John H., M. D., Resident Physician and Superintendent State Hospital, Tewksbury, Mass.

LIST OF MEMBERS.

- 1913 Nickerson, Mary A., M. D., Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- 1886 Nims, Edward B., M. D. (formerly Superintendent Northampton Insane Hospital), 40 Harvard St., Springfield, Mass.
- 1892 Noble, Alfred I., M. D., Superintendent Kalamazoo State Hospital, Kalamazoo, Mich.
- 1912 Noble, Ermy C., M. D., Assistant Physician Boston State Hospital, Dorchester Centre, Mass. (*Associate.*)
- 1892 Noble, Henry S., M. D., Superintendent Connecticut Hospital for the Insane, Middletown, Conn.
- 1912 Noble, Mary E. Gill, M. D., Assistant Physician Boston State Hospital, Dorchester Centre, Mass. (*Associate.*)
- 1903 Norbury, Frank P., M. D., Medical Director, The Norbury Sanatorium, Jacksonville, Ill.
- 1912 Norquay, H. C., M. D., Assistant Superintendent Selkirk Hospital for Insane, Selkirk, Manitoba, Canada. (*Associate.*)
- 1906 North, Charles H., M. D., Superintendent Dannemora State Hospital, Dannemora, N. Y.
- 1907 Norton, Eben C., M. D., Physician-in-Charge Norwood Private Hospital for Mental Diseases, Norwood, Mass.
- 1898 Noyes, William, M. D. (formerly Superintendent Boston State Hospital, Mattapan, Mass.), 11 St. John St., Jamaica Plain, Mass.

O

- 1904 O'Brien, John D., M. D., New Pomerene Building, Canton, O. (*Associate.*)
- 1913 O'Brien, John F., M. D., Taunton State Hospital, Taunton, Mass. (*Associate.*)
- 1905 O'Hanlon, George, M. D., Bellevue Hospital, New York, N. Y.
- 1912 O'Harrow, Marian, M. D., Friends' Asylum, Frankford, P. O. Box 20, Station F, Philadelphia, Pa. (*Associate.*)
- 1908 O'Malley, Mary, M. D., Woman Assistant Physician, Government Hospital for Insane, Washington, D. C. (*Associate.*)
- 1889 Orth, H. L., M. D., Superintendent and Physician Pennsylvania State Lunatic Hospital, Harrisburg, Pa.
- 1907 Orton, Samuel T., M. D., Clinical Director and Pathologist Pennsylvania Hospital for Insane, Philadelphia, Pa. (*Associate.*)
- 1910 Osborn, W. S., M. D., 605 Fleming Bldg., Des Moines, Ia. (*Associate.*)
- 1898 Ostrander, Herman, M. D., Assistant Superintendent Kalamazoo State Hospital, Kalamazoo, Mich.
- 1913 Overholser, M. P., M. D., Superintendent State Hospital No. 3, Nevada, Mo.

P

- 1907 Packard, Frederick H., M. D., Assistant Physician McLean Hospital, Waverley, Mass. (*Associate.*)
- 1904 Packer, Flavius, M. D., Physician-in-Charge, West Hill, 261st St. and Broadway, New York, N. Y.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1889 Page, Charles W., M. D., 94 Woodland St., Hartford, Conn.
- 1894 Page, H. W., M. D., Superintendent Hospital Cottages for Children, Baldwinville, Mass.
- 1912 Paine, Harlan L., M. D., Assistant Physician Danvers State Hospital, Hathorne, Mass. (*Associate.*)
- 1887 Paine, N. Emmons, M. D. (formerly Superintendent Westborough State Hospital), The Newton Sanatorium, West Newton, Mass.
- 1897 Palmer, Harold L., M. D., Superintendent Utica State Hospital, Utica, N. Y.
- 1894 Parant, A. Victor, M. D., Toulouse, France. (*Honorary.*)
- 1912 Parker, Charles S., M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1913 Parker, George M., M. D., St. Vincent's Hospital, New York, N. Y.
- 1905 Parsons, Frederick W., M. D., First Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1865 Parsons, Ralph L., M. D., Private Hospital for Mental Diseases, Greenmont-on-Hudson, Ossining Postoffice, N. Y.
- 1913 Parsons, Richard H., M. D., Burlington Co. Hospital for Insane, Mt. Holly, N. J.
- 1909 Partlow, William D., M. D., Assistant Superintendent The Bryce Hospital, Tuscaloosa, Ala.
- 1913 Patterson, Christopher J., M. D., Physician-in-Charge, Marshall Sanitarium, Troy, N. Y.
- 1912 Payne, Guy, M. D., Medical Superintendent Essex Co. Hospital for Insane, Cedar Grove, N. J.
- 1897 Pease, Caroline S., M. D., Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- 1912 Pecival, Joseph P., M. D., Superintendent Chicago State Hospital, Dunning, Ill.
- 1901 Perry, Middleton L., M. D., Superintendent Kansas State Hospital for Epileptics, Parsons, Kans.
- 1893 Peterson, Frederick, M. D., Professor of Psychiatry Columbia University, 20 W. 50th St., New York, N. Y.
- 1912 Peterson, Jessie, M. D., Assistant Physician State Hospital, Norristown, Pa.
- 1913 Petery, Arthur K., M. D., State Hospital for the Insane, Norristown, Pa. (*Associate.*)
- 1912 Pettibone, Ralph S., M. D., Assistant Physician Willard State Hospital, Willard, N. Y. (*Associate.*)
- 1912 Pettijohn, Abra C., M. D., Superintendent State Hospital No. 2, St. Joseph, Mo.
- 1913 Phelps, R. M., M. D., Superintendent St. Peter State Hospital, St. Peter, Minn.
- 1912 Phillips, Horace, M. D., 905 Land Title Building, care of B. Griffith Jones, Philadelphia, Pa. (*Associate.*)
- 1912 Pierson, Clarence, M. D., Superintendent State Insane Asylum, Jackson, La.

LIST OF MEMBERS.

- 1913 Pierson, Sarah G., M. D., Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- 1913 Pietrowicz, Stephen R., M. D., Superintendent Dunning Institutions, Chicago, Ill.
- 1890 Pilgrim, Chas. W., M. D., Superintendent Hudson River State Hospital, Poughkeepsie, N. Y. (*President, 1911.*)
- 1910 Pitman, Mason W. H., M. D., 1170 Hoe Ave., New York, N. Y.
- 1912 Pogue, Mary E., M. D., Physician-in-Charge, Oak Leigh Sanitarium, Lake Geneva, Wis.
- 1910 Pollock, Henry M., M. D., Superintendent Norwich Hospital for the Insane, Norwich, Conn.
- 1901 Pomeroy, E. H., M. D., Bradentown, Fla.
- 1905 Porteous, Carlyle A., M. D., Assistant Superintendent Protestant Hospital for the Insane, New P. O. Box 2280, Special Bag, Montreal, Canada.
- 1911 Porter, William C., M. D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Potter, Clarence A., M. D., First Assistant Physician Gowanda State Hospital, Collins, N. Y. (*Associate.*)
- 1892 Potter, Ezra B., M. D., First Assistant Physician Rochester State Hospital, Rochester, N. Y.
- 1913 Potter, Frederick C., M. D., Pathologist Central Indiana Hospital for Insane, Indianapolis, Ind. (*Associate.*)
- 1913 Powers, Herbert Wm., M. D., Milwaukee Sanitarium, Wauwatosa, Wis.
- 1906 Preston, John, M. D., Superintendent State Lunatic Asylum, Austin, Tex.
- 1908 Priddy, A. S., M. D., Superintendent Virginia State Epileptic Colony, Madison Heights, Va
- 1913 Priestman, Gordon, M. D., Assistant Physician, Willard State Hospital, Willard, N. Y. (*Associate.*)
- 1913 Pritchard, William B., M. D., New York City Hospital, Blackwell's Island, New York, N. Y.
- 1908 Pritchard, William H., M. D., 507 Second Ave., Gallipolis, O.
- 1898 Prout, Thos. P., M. D., Fair Oaks Sanitarium, Summit, N. J.
- 1898 Punton, John, M. D., Professor Nervous and Mental Diseases, University Medical College, 2017 Linwood Boulevard, Kansas City, Mo.
- 1912 Purdum, Harry D., M. D., Assistant Physician Springfield State Hospital, Sykesville, Md. (*Associate.*)
- 1898 Putnam, Emma, M. D., Assistant Physician Hudson State Hospital, Poughkeepsie, N. Y.

Q

- 1879 Quinby, Hosea M., M. D. (formerly Medical Superintendent Worcester State Hospital), Worcester, Mass.

R

- 1910 Ramsey, William E., M. D., Perth Amboy, N. J.
- 1909 Randolph, James H., M. D., Assistant Physician Florida State Hospital, Tallahassee, Fla. (*Associate.*)
- 1894 Ratliff, J. M., M. D., Resident Medical Superintendent Dayton Sanitarium, Dayton, Ohio.
- 1913 Ratliff, Thomas A., M. D., The Benedict Apartments, Washington, D. C. (*Associate.*)
- 1909 Raynor, Mortimer W., M. D., Senior Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Read, Charles F., M. D., Assistant Superintendent Kankakee State Hospital, Hospital, Ill. (*Associate.*)
- 1913 Reed, Ralph G., M. D., Assistant Physician State Hospital, Central Islip, N. Y. (*Associate.*)
- 1896 Régis, Emmanuel, M. D., Bordeaux, France. (*Honorary.*)
- 1911 Rhein, John H. W., M. D., Professor Diseases of Mind and Nervous System, Philadelphia Polyclinic and College of Medicine, 1732 Pine St., Philadelphia, Pa.
- 1912 Richards, Cyril G., M. D., Assistant Physician Boston State Hospital, Dorchester Centre, Mass. (*Associate.*)
- 1911 Richards, Robert L., M. D., Superintendent Mendocino State Hospital, Talmage, Cal.
- 1904 Richardson, Wm. W., M. D., Medical Director The Mercer Sanitarium, Mercer, Pa.
- 1908 Ricksher, Charles, M. D., Lake Geneva Sanitarium, Lake Geneva, Wis.
- 1913 Ridgway, R. F. L., M. D., Pennsylvania State Lunatic Hospital, Harrisburg, Pa. (*Associate.*)
- 1902 Riggs, Charles Eugene, M. D., Professor of Nervous and Mental Diseases and Chief of Department Neurology and Psychiatry, University of Minnesota, 10 Crocus Hill, St. Paul, Minn.
- 1911 Riggs, George Henry, M. D., Superintendent Riggs Cottage-Sanitarium, Ijamsville, Md.
- 1910 Ripley, Horace G., M. D., Assistant Superintendent State Hospital, Taunton, Mass.
- 1899 Ritti, Antoine, M. D., Honorary Physician-in-Chief Maison Nationale de Charenton, 68 Boulevard Exelmans, Paris, France. (*Honorary.*)
- 1901 Robertson, Frank W., M. D. (formerly General Superintendent New York State Reformatory at Elmira), 411 West End Ave., New York.
- 1908 Robins, William L., M. D., 1700 13th St., N. W., Washington, D. C.
- 1911 Robinson, G. Wilse, M. D., Superintendent The Puntun Sanitarium, Kansas City, Mo.
- 1913 Robinson, Hedley V., M. D., Assistant Physician Protestant Hospital for the Insane, New P. O. Box 2280, Montreal, Que. (*Associate.*)

LIST OF MEMBERS.

- 1909 Robinson, W. J., M. D., Superintendent Asylum for the Insane, London, Ontario.
- 1912 Rogers, Arthur W., M. D., Superintendent Oconomawoc Health Resort for Nervous & Mental Diseases, Oconomawoc, Wis.
- 1907 Rogers, Chas. B., M. D., Physician-in-Charge Fair Oaks Villa, Cuyahoga Falls, O. (*Associate.*)
- 1913 Rogers, John B., M. D., Assistant Physician Napa State Hospital, Napa, Cal. (*Associate.*)
- 1912 Rooks, J. T., M. D., Assistant Physician Kankakee State Hospital, Hospital, Ill. (*Associate.*)
- 1909 Rosanoff, A. J., M. D., First Assistant Physician Kings Park State Hospital, Kings Park, N. Y.
- 1907 Ross, Donald L., M. D., Superintendent Connecticut Colony for Epileptics, Mansfield Depot, Conn.
- 1912 Ross, John R., M. D., First Assistant Physician Dannemora State Hospital, Dannemora, N. Y. (*Associate.*)
- 1899 Rowe, John T. W., M. D., First Assistant Physician Manhattan State Hospital, Ward's Island, New York, N. Y.
- 1911 Rowe, Melvin J., M. D., Monrovia, Cal. (*Associate.*)
- 1912 Rowland, George A., M. D., Assistant Physician Columbus State Hospital, Columbus, O. (*Associate.*)
- 1913 Ruggles, Arthur H., M. D., Assistant Physician Butler Hospital, Providence, R. I. (*Associate.*)
- 1907 Ruland, Frederick D., M. D., Proprietor Dr. Ruland's Sanitarium, Westport, Conn.
- 1912 Runyon, Wm. D., M. D., Assistant Physician State Sanatorium for Treatment of Tuberculosis, Oakdale, Ia. (*Associate.*)
- 1913 Russell, Clarence L., M. D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Russell, Rose A., M. D., Assistant Physician Cherokee State Hospital, Cherokee, Ia. (*Associate.*)
- 1898 Russell, Wm. L., M. D., Superintendent Bloomingdale Hospital, White Plains, N. Y.
- 1907 Ryan, Edward, M. D., Superintendent Rockwood Hospital for the Insane, Kingston, Ontario.
- 1899 Ryon, Walter G., M. D., Medical Inspector for State Hospital Commission, Albany, N. Y.

S

- 1894 Sachs, B., M. D., 116 W. 59th St., New York, N. Y.
- 1912 Salmon, Thomas W., M. D., National Committee for Mental Hygiene, 50 Union Square, New York, N. Y.
- 1908 Sandy, William C., M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1912 Sanford, Walter H., M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)

- 1913 Sargent, George F., M. D., Assistant Physician Sheppard and Enoch Pratt Hospital, Towson, Md. (*Associate.*)
- 1913 Saunders, Eleanora B., M. D., State Hospital for the Insane, Columbia, S. C. (*Associate.*)
- 1909 Scanland, J. M., M. D., Warm Springs, Montana.
- 1913 Schenkelberger, Frederick P., M. D., Gowanda State Hospital, Collins, N. Y. (*Associate.*)
- 1909 Schlapp, Max G., M. D., Lecturer on Neuro-Histology and Pathology, Cornell University, 43 E. 78th St., New York City.
- 1894 Schmid, H. Ernest, M. D., White Plains, N. Y.
- 1912 Schneider, C. von A., M. D., Assistant Physician Gowanda State Hospital, Collins, N. Y. (*Associate.*)
- 1910 Schwinn, George H., M. D., Government Hospital for the Insane, Washington, D. C. (*Associate.*)
- 1912 Scott, Thompson P., M. D., First Assistant Physician Topeka State Hospital, Topeka, Kans. (*Associate.*)
- 1886 Scribner, Ernest V., M. D., Medical Superintendent Worcester State Hospital, Worcester, Mass.
- 1910 Scripture, Edward W., M. D., Associate in Psychiatry and Director of Research Laboratory of Neurology in Columbia University, 236 West 74th St., New York, N. Y.
- 1893 Searcy, James T., M. D., Medical Superintendent The Alabama Insane Hospitals, Tuscaloosa, Ala. (*President, 1913.*)
- 1894 Searl, Wm. A., M. D., Medical Director Fair Oaks Villa, Cuyahoga Falls, Ohio.
- 1889 Sefton, Frederick, M. D., The Pines, Auburn, N. Y.
- 1897 Semelaigne, René, M. D., Medecin en Chef Maison de Santé, Neuilly sur Seine, Paris, France. (*Honorary.*)
- 1892 Semple, John M., M. D., Superintendent Eastern Washington Hospital for the Insane, Medical Lake, Wash.
- 1908 Seybert, Frank T., M. D., Alienist St. Bernard's Hospital, 532 First Ave., Council Bluffs, Iowa.
- 1903 Shanahan, Wm. T., M. D., Medical Superintendent Craig Colony for Epileptics, Sonyea, N. Y.
- 1903 Sharp, Edw. A., M. D., 162 Allen St., Buffalo, N. Y.
- 1913 Shaw, Arthur L., M. D., Assistant Physician Craig Colony for Epileptics, Sonyea, N. Y. (*Associate.*)
- 1909 Shellenberger, Edward B., M. D., Assistant Physician State Hospital for Insane, Warren, Pa. (*Associate.*)
- 1904 Shepherd, Arthur F., M. D., Ohio State Board of Administration, Columbus, Ohio.
- 1912 Sherman, Adin, M. D., Superintendent Northern Hospital for Insane, Winnebago, Wis.
- 1905 Shirres, David Alexander, M. D., Consulting Neurologist to the Protestant Hospital for the Insane, 670 W. Sherbrooke St., Montreal, Can.

LIST OF MEMBERS.

- 1912 Sights, H. P., M.D., Superintendent Western Kentucky Asylum, Hopkinsville, Ky.
- 1911 Simonis, Arthur E., M.D., Pennhurst, Pa. (*Associate.*)
- 1892 Simpson, J. C., M.D., 1421 Massachusetts Ave., Washington, D. C.
- 1910 Skinner, William W., M.D., Consulting Surgeon State Hospital, Willard, N. Y., 449 Main St., Geneva, N. Y.
- 1905 Skoog, A. L., M.D., Associate Professor of Neurology, University of Kansas, 1004 Rialto Building, Kansas City, Mo.
- 1904 Slocum, Clarence J., M.D., Resident Physician Dr. MacDonald's House, Central Valley, Orange County, N. Y. (*Associate.*)
- 1885 Smith, Edwin Everett, M.D. (formerly Medical Director New Jersey State Hospital), Kensett, Norwalk, Conn.
- 1898 Smith, Geo. A., M.D., Medical Superintendent Central Islip State Hospital, Central Islip, L. I., N. Y.
- 1902 Smith, Gilbert T., M.D., Assistant Superintendent Dr. McFarland's Sanitarium, Greens Farms, Conn. (*Associate.*)
- 1912 Smith, H. M., M.D., Superintendent New Mexico Insane Asylum, Las Vegas, N. Mex.
- 1913 Smith, H. V. A., M.D., Superintendent Hudson Co. Hospital for Insane, Jersey City, N. J.
- 1913 Smith, J. Anson, M.D., Camden County Hospital for Insane, Blackwood, N. J.
- 1913 Smith, J. G. Fowble, M.D., Assistant Physician Springfield State Hospital, Sykesville, Md. (*Associate.*)
- 1911 Smith, Joseph, M.D., Assistant Physician Long Island State Hospital, Brooklyn, N. Y. (*Associate.*)
- 1912 Smith, O. E., M.D., Assistant Physician Fergus Falls State Hospital, Fergus Falls, Minn. (*Associate.*)
- 1912 Smith, Robert P., M.D., Cobb Building, Seattle, Wash.
- 1891 Smith, S. E., M.D., Medical Superintendent Eastern Indiana Hospital for the Insane, "Easthaven," Richmond, Ind. (*Vice-President, 1914.*)
- 1885 Smith, Stephen, M.D., 300 Central Park, West, New York, N. Y. (*Honorary.*)
- 1911 Snavely, Earl H., M.D., Assistant Physician Essex County Hospital for Insane, Cedar Grove, N. J. (*Associate.*)
- 1908 Solier, Charles H., M.D., Superintendent State Hospital, Evanston, Wyo.
- 1898 Somers, Elbert M., M.D., Superintendent Long Island State Hospital, Brooklyn, N. Y.
- 1913 Somerville, William G., M.D., Neurologist City Hospital, Memphis, Tenn.
- 1907 Southard, Elmer E., M.D., Director Psychopathic Department, Boston State Hospital, 74 Fenwood Road, Boston, Mass.
- 1913 Spalding, Harry O., M.D., Acting Superintendent Westborough State Hospital, Westborough, Mass.

- 1899 Spence, James Beveridge, M. D., R. U. I., M. Ch., Resident Physician and Superintendent Staffordshire County Asylum, Burntwood, near Litchfield, England. (*Honorary.*)
- 1911 Spencer, Elizabeth C., M. D., Chief Resident Physician Department for Women, State Hospital, Norristown, Pa.
- 1894 Sprague, Geo. P., M. D., Superintendent High Oaks Sanitarium, Lexington, Ky.
- 1892 Stanley, Charles E., M. D., Assistant Physician Connecticut Hospital for the Insane, Middletown, Conn. (*Associate.*)
- 1913 Stearns, Albert Warren, M. D., First Assistant Physician Psychopathic Hospital, Boston, Mass. (*Associate.*)
- 1898 Stearns, Wm. G., M. D., 92 State St., Chicago, Ill.
- 1884 Stedman, Henry R., M. D., Bournewood Private Hospital for Nervous and Mental Diseases, South St., Brookline, Mass.
- 1895 Stevens, Frank T., M. D., 609 Exchange National Bank Building, Colorado Springs, Colo.
- 1894 Stewart, Nolan, M. D., Superintendent State Insane Hospital, Asylum, Miss.
- 1907 Stick, H. Louis, M. D., Superintendent Worcester State Asylum, Worcester, Mass.
- 1910 Stocking, Leonard, M. D., Superintendent State Hospital, Agnew, Cal.
- 1904 Stockton, Geo., M. D. (formerly Superintendent Columbus State Hospital), 151 E. Broad St., Columbus, O.
- 1909 Stone, Elmer E., M. D. (formerly Superintendent Napa State Hospital, Napa, Cal.), 291 Geary St., San Francisco, Cal.
- 1892 Stone, William A., M. D. (formerly Assistant Superintendent Michigan Asylum for the Insane), 1102 W. Main St., Kalamazoo, Mich.
- 1913 Sturgis, Karl B., M. D., Assistant Physician Maine Insane Hospital, Augusta, Me. (*Associate.*)
- 1912 Sullivan, F. J., M. D., Kankakee State Hospital, Hospital, Ill. (*Associate.*)
- 1903 Swift, Henry M., M. D., 655 Congress St., Portland, Me.
- 1894 Sylvester, William E., M. D., Canandaigua, N. Y.

T

- 1899 Taddiken, Paul Gerald, M. D., First Assistant Physician St. Lawrence State Hospital, Ogdensburg, N. Y. (*Associate.*)
- 1881 Tamburini, A., M. D., Reggio-Emilia, Italy. (*Honorary.*)
- 1892 Taylor, Isaac M., M. D., Superintendent Broadoaks Sanatorium, Morganton, N. C.
- 1908 Taylor, Walter A., M. D., 68 Prospect St., Trenton, N. J.
- 1910 Terflinger, Fred. W., M. D., Medical Superintendent Northern Hospital for Insane, Logansport, Indiana.
- 1906 Thompson, Charles E., M. D., Executive Officer State Board of Insanity, State House, Boston, Mass.

LIST OF MEMBERS.

- 1891 Thompson, J. L., M.D., Assistant Physician State Hospital for the Insane, Columbia, S. C. (*Associate.*)
- 1912 Thompson, Nelson W., M.D., Assistant Physician Middletown State Hospital, Middletown, N. Y. (*Associate.*)
- 1896 Thompson, Whitefield N., M.D., Medical Superintendent The Hartford Retreat, Hartford, Conn.
- 1913 Thomson, A. W., M.D., Assistant Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Throckmorton, Tom B., M.D., 407 Equitable Building, Des Moines, Ia. (*Associate.*)
- 1912 Tiffany, William J., M.D., Assistant Physician Binghamton State Hospital, Binghamton, N. Y. (*Associate.*)
- 1912 Todd, Leona E., M.D., Woman Physician Hudson River State Hospital, Poughkeepsie, N. Y. (*Associate.*)
- 1912 Toomey, Joseph H., M.D., Maine Insane Hospital, Augusta, Me. (*Associate.*)
- 1901 Torney, Geo. H., Jr., M.D., Bournewood Hospital, South St., Brookline, Mass.
- 1902 Toulouse, Edouard, M.D., Physician-in-Chief to Villejuif Asylum; Director Revue de Psychiatrie; Director of Laboratory of Experimental Psychology, l'Ecole des Hautes Etudes, Paris; Villejuif (Seine), France. (*Honorary.*)
- 1899 Townsend, Theodore Irving, M.D., First Assistant Physician Binghamton State Hospital, Binghamton, N. Y.
- 1913 Trader, Wm. N., M.D., Assistant Physician Craig Colony for Epileptics, Sonyea, N. Y. (*Associate.*)
- 1912 Treadway, Walter L., M.D., Assistant Surgeon U. S. Public Health Service, Ellis Island, New York. (*Associate.*)
- 1912 Trenkle, Henry L., M.D., Assistant Physician Pontiac State Hospital, Pontiac, Mich. (*Associate.*)
- 1912 Truitt, R. P., M.D., Physician-in-Chief City Detention Hospital for the Insane, Baltimore, Md.
- 1901 Turner, John S., M.D., 326-27 Linz Bldg., Dallas, Texas.
- 1913 Turner, Reeve, M.D., 522 West 149th St., New York, N. Y.
- 1892 Tuttle, Geo. T., M.D., Medical Superintendent McLean Hospital, Waverley, Mass.
- 1908 Twohey, John J., M.D., Physician-in-Charge, Providence Retreat, Buffalo, N. Y.
- 1909 Tyson, Forrest C., M.D., Assistant Superintendent Eastern Maine Insane Hospital, Bangor, Maine. (*Associate.*)

U

- 1909 Uhls, L. L., M.D., Superintendent Osawatomie State Hospital, Osawatomie, Kansas.
- 1899 Urquhart, Alexander R., M.D., F.R.C.P.E., Superintendent Royal Asylum, Perth, Scotland. (*Honorary.*)

V

- 1911 VanWart, Roy McLean, M. D., Visiting Physician to Nervous Wards of Charity Hospital, 1126 Maison Blanche Building, New Orleans, La.
- 1907 Vaughan, P. H. S., M. D., Yarmouth, Me.
- 1913 Vaux, Charles L., M. D., Senior Assistant Physician, State Hospital, Central Islip, N. Y. (*Associate.*)
- 1912 Veeder, Willard H., M. D., Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- 1896 Villeneuve, George, M. D., Medical Superintendent Hospital Saint Jean de Dieu, Gamelin, Que.
- 1893 Voldeng, M. Nelson, M. D., Superintendent Cherokee State Hospital, Cherokee, Ia.
- 1912 Vosburgh, Stephen E., M. D., Assistant Superintendent Maine Insane Hospital, Augusta, Me. (*Associate.*)

W

- 1895 Wade, J. Percy, M. D., Medical Superintendent Spring Grove Hospital for the Insane, Catonsville, Md.
- 1890 Wagner, Charles G., M. D., Medical Superintendent Binghamton State Hospital, Binghamton, N. Y. (*Secretary and Treasurer.*)
- 1912 Walker, Eloise, M. D., Woman Physician, Binghamton State Hospital, Binghamton, N. Y. (*Associate.*)
- 1905 Walker, Irving Lee, M. D., Assistant Physician Rochester State Hospital, Rochester, N. Y. (*Associate.*)
- 1905 Walker, Lewis M., M. D., First Assistant Physician Medfield State Asylum, Medfield, Mass.
- 1913 Wardner, Drew M., Essex County Hospital for Insane, Cedar Grove, N. J. (*Associate.*)
- 1912 Washburn, Philip C., M. D., Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1912 Waterman, Chester, M. D., Assistant Physician Willard State Hospital, Willard, N. Y. (*Associate.*)
- 1913 Webster, B. R., M. D., Assistant Physician Matteawan State Hospital, Beacon, N. Y. (*Associate.*)
- 1910 Weeks, David F., M. D., Medical Superintendent and Executive Officer New Jersey State Village for Epileptics, Skillman, N. J.
- 1913 Weisenburg, T. H., M. D., 2030 Chestnut St., Philadelphia, Pa.
- 1893 Welch, G. O., M. D., Medical Superintendent Fergus Falls State Hospital, Fergus Falls, Minn.
- 1892 Wentworth, Lowell F., M. D., Deputy Executive Officer State Board of Insanity, 36 State House, Boston, Mass.
- 1904 West, Calvin B., M. D., Senior Assistant Physician Kings Park State Hospital, Kings Park, N. Y. (*Associate.*)
- 1912 Weston, Paul G., M. D., Pathologist State Hospital, Warren, Pa. (*Associate.*)

LIST OF MEMBERS.

- 1904 Wherry, J. W., M. D. (formerly Medical Superintendent "Glenwood," Dansville, N. Y.), Los Gatos, California. (*Associate.*)
- 1912 White, F. S., M. D., Superintendent Southwestern Insane Asylum, San Antonio, Tex.
- 1906 White, Grace E., M. D., Wood Lea Sanitarium, 300 Ardmore Ave., Ardmore, Pa. (*Associate.*)
- 1891 White, M. J., M. D., Medical Superintendent Milwaukee Hospital for the Insane, Wauwatosa, Wis.
- 1902 White, Wm. A., M. D., Superintendent Government Hospital for the Insane, Washington, D. C.
- 1909 White, William Rushmore, M. D., Superintendent Patapsco Manor Sanitarium, Ellicott City, Md.
- 1912 Whitney, Ray L., M. D., First Assistant Physician Worcester State Hospital, Worcester, Mass. (*Associate.*)
- 1903 Wilcox, Franklin S., M. D., Assistant Superintendent Southern California State Hospital, Patton, Cal. (*Associate.*)
- 1898 Wilgus, Sidney D., M. D., Superintendent and Proprietor The Ransom Sanitarium, Box 304, Rockford, Ill.
- 1913 Williams, B. F., M. D., Superintendent Nebraska Hospital for Insane, Lincoln, Neb.
- 1906 Williams, Berthold A., M. D., Senior Resident Physician, Cincinnati Sanitarium, College Hill, Ohio.
- 1904 Williams, G. H., M. D., Assistant Physician Columbus State Hospital, Columbus, Ohio.
- 1912 Williams, Harry D., M. D., Assistant Physician New Jersey State Hospital, Trenton, N. J. (*Associate.*)
- 1910 Williams, Tom A., M. D., 1758 K St., N. W., Washington, D. C.
- 1884 Williamson, Alonzo P., M. D., 842 N. Second St., Santa Monica, Cal.
- 1888 Wilsey, O. J., M. D., Physician-in-Charge Long Island Home, Amityville, N. Y.
- 1910 Wilson, William T., M. D., Superintendent Hospital for the Insane, Penetanguishene, Ont.
- 1907 Winterode, Robert P., M. D., Superintendent Crownsville State Hospital, Crownsville, Md.
- 1912 Wiseman, John I., M. D., Assistant Physician Boston State Hospital, Dorchester Centre, Mass. (*Associate.*)
- 1913 Wiswall, Edward H., M. D., Proprietor Wellesley Nervine, Wellesley, Mass.
- 1895 Witte, M. E., M. D., Medical Superintendent Clarinda State Hospital, Clarinda, Ia.
- 1902 Wolfe, Mary Moore, M. D., Stonyhurst Sanitarium, Holmesburg, Philadelphia, Pa.
- 1913 Wolff, George B., M. D., Clinical Assistant Sheppard and Enoch Pratt Hospital, Towson, Md. (*Associate.*)
- 1913 Wood, H. Walton, M. D., Bournemouth Hospital, Brookline, Mass.
- 1910 Woodbury, Frank, M. D., Secretary Committee on Lunacy State of Pennsylvania, 717 Bulletin Building, Philadelphia, Pa.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

- 1907 **Woodman, Robert C., M.D.**, First Assistant Physician Middletown State Homeopathic Hospital, Middletown, N. Y. (*Associate.*)
- 1890 **Woodson, C. R., M.D.**, Dr. C. R. Woodson's Sanitarium, St. Joseph, Mo.
- 1911 **Woodward, Esther S. B., M.D.**, Assistant Physician Norwich State Hospital, Norwich, Conn. (*Associate.*)
- 1906 **Worcester, Samuel, M.D.**, Assistant Superintendent Dr. Wadsworth's Sanitarium, Moss Hill Villa, South Norwalk, Conn.
- 1901 **Work, Hubert, M.D.**, Superintendent Woodcroft Hospital for Nervous Diseases, Pueblo, Col. (*President, 1912.*)
- 1893 **Wright, W. E., M.D.**, 204-206 State St., Harrisburg, Pa. (*Associate.*)
- 1912 **Wright, Wm. W., M.D.**, Psychiatric Institute, Ward's Island, New York, N. Y. (*Associate.*)

Y

- 1912 **Yarbrough, Y. H., M.D.**, Assistant Physician Georgia State Sanitarium, Milledgeville, Ga. (*Associate.*)
- 1907 **Yeaman, Malcolm H., M.D.**, Beechurst Sanitarium, Louisville, Ky.
- 1894 **Yellowlees, David, M.D., L.R.C.S., Edin., F.F.P.S. and LL.D.**, Glasgow (formerly Physician Superintendent Glasgow Royal Asylum, Gartnavel), 6 Albert Gate, Dowanhill, Glasgow, Scotland. (*Honorary.*)
- 1912 **Yeretzian, K. H., M.D.**, Assistant Physician Columbus State Hospital, Columbus, O. (*Associate.*)
- 1906 **Young, David, M.D.** (formerly Superintendent Asylum for the Insane, Selkirk, Manitoba, Canada), 494 Camden Place, Winnipeg, Manitoba, Canada.
- 1906 **Youngling, George S., M.D.**, Consulting Physician Central Islip State Hospital, 453 West 34th St., New York, N. Y.
- 1913 **Yule, Lorne W., M.D.**, Assistant Physician Northern Hospital for Insane, Logansport, Ind. (*Associate.*)

Z

- 1906 **Zeller, George A., M.D.**, Superintendent Peoria State Hospital, Peoria, Ill.

HONORARY MEMBERS.

HONORARY MEMBERS

- 1890 Henry M. Bannister, M. D., Evanston, Ill.
 1898 James M. Buckley, D. D., LL. D., Morristown, N. J.
 1881 T. S. Clouston, M. D., F. R. C. P., F. R. S. E., Edinburgh, Scotland.
 1908 Shepherd I. Franz, A. B., Ph. D., Washington, D. C.
 1891 G. Stanley Hall, Ph. D., LL. D., Worcester, Mass.
 1899 Henry Hun, M. D., Albany, N. Y.
 1903 Wesley Mills, A. M., M. D., Montreal, Que.
 1896 Jules Morel, M. D., Ghent, Belgium.
 1881 A. Motet, M. D., Paris, France.
 1894 A. Victor Parant, M. D., Toulouse, France.
 1896 Emmanuel Régis, M. D., Bordeaux, France.
 1899 Antoine Ritti, M. D., Charenton, près Paris, France.
 1897 René Semelaigne, M. D., Paris, France.
 1885 Stephen Smith, M. D., New York, N. Y.
 1899 James Beveridge Spence, M. D., R. U. I. M. Ch., Burntwood, England.
 1881 A Tamburini M. D., Reggio-Emilia, Italy.
 1902 Edouard Toulouse, M. D., Villejuif, France.
 1899 Alexander R. Urquhart, M. D., F. R. C. P. E., Perth, Scotland.
 1894 David Yellowlees, M. D., F. F. P. S., LL. D., Glasgow, Scotland.

Total Membership:

Active	457
Associate	250
Honorary	19

Total 726

The following tabulation shows the membership of the Association for the past decade:

Members	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
Active.....	280	273	286	307	325	339	337	360	398	457
Associate.....	107	126	109	119	117	134	134	133	203	250
Honorary.....	21	22	24	24	24	24	22	21	20	19
Total.....	408	421	419	450	466	497	493	514	621	726

NOTE.—It will be observed that the list of members as here printed shows the dates when each member became identified with the Association. This arrangement is believed to be a valuable addition to the list which will be appreciated.

MORTUARY

- E. H. VanDeusen, M. D., Kalamazoo, Mich. Died July 6, 1909.
 B. D. Eastman, M. D., Topeka, Kans. Died Sept. 11, 1909.
 W. C. Krauss, M. D., Buffalo, N. Y. Died Sept. 21, 1909.
 W. A. Gordon, M. D., Winnebago, Wis. Died October, 1909.
 M. J. Stack, M. D., Washington, D. C. Died Oct. 17, 1909.
 Henry M. Weeks, M. D., Spring City, Pa. Died Dec. 16, 1909.
 John A. Beauchamp, M. D., Nashville, Tenn. Died Feb. 27, 1910.
 James Rutherford, M. D., Dumfries, Scotland. Died Mar. 8, 1910.
 O. M. Dewing, M. D., Brooklyn, N. Y. Died Mar. 14, 1910.
 Bigelow T. Sanborn, M. D., Augusta, Me. Died Apr. 18, 1910.
 James B. Ayer, M. D., Boston, Mass. Died May 14, 1910.
 Louis C. Pettit, M. D., New York, N. Y. Died June 10, 1910.
 Dwight R. Burrell, M. D., Canandaigua, N. Y. Died June 18, 1910.
 George F. Cook, M. D., Oxford, Ohio. Died Sept. 21, 1910.
 William P. Letchworth, LL. D., Castile, N. Y. Died Dec. 1, 1910.
 Presley C. Hunt, M. D., Washington, D. C. Died Dec. 15, 1910.
 Uranus O. Wingate, M. D., Milwaukee, Wis. Died February 18, 1911.
 I. W. Blackburn, M. D., Washington, D. C. Died June 18, 1911.
 A. J. Lyons, M. D., Spencer, W. Va. Died June 1, 1911.
 J. Elvin Courtney, M. D., Denver, Col. Died June 22, 1911.
 J. N. Whitaker, M. D., Milledgeville, Ga. Died August 11, 1911.
 Robert E. Doran, M. D., Brooklyn, N. Y. Died Sept. 23, 1911.
 George F. Jelly, M. D., Boston, Mass. Died Oct. 24, 1911.
 D. R. Wallace, M. D., Waco, Tex. Died Nov. 22, 1911.
 Merritt B. Campbell, M. D., Heber, Cal. Died Dec. 1, 1911.
 James McKee, M. D., Raleigh, N. C. Died January 10, 1912.
 Morris S. Guth, M. D., Erie, Pa. Died March 27, 1912.
 Horace W. Eggleston, M. D., Binghamton, N. Y. Died April 11, 1912.
 Thomas J. Mitchell, M. D., Jackson, Miss. Died Sept. 16, 1912.
 Daniel Clark, M. D., Toronto, Ont. Died Sept., 1912.
 George H. Knight, M. D., Lakeville, Conn. Died Oct. 4, 1912.
 George C. Crandall, M. D., St. Louis, Mo. Died Dec. 5, 1912.
 Henry S. Upson, M. D., Cleveland, O. Died Feb., 1913.
 H. A. Tomlinson, M. D., Willmar, Minn. Died May 30, 1913.
 S. Weir Mitchell, M. D., Philadelphia, Pa. Died Jan. 4, 1914.

RESIGNATIONS

- W. Herbert Adams, M. D., New York, N. Y.
 R. L. Willis, M. D., Crab Orchard, Ky.

PRESIDENTS OF THE ASSOCIATION

Samuel B. Woodward, M. D., Worcester, Mass.....	1844-1848
William W. Aul, M. D., Columbus, Ohio.....	1848-1851
Luther V. Bell, M. D., Somerville, Mass.....	1851-1855
Isaac Ray, M. D., Providence, R. I.....	1855-1859
Andrew McFarland, M. D., Concord, N. H.....	1859-1862
Thomas S. Kirkbride, M. D., Philadelphia, Pa.....	1862-1870
John S. Butler, M. D., Hartford, Ct.....	1870-1873
Charles H. Nichols, M. D., Bloomingdale, N. Y.....	1873-1879
Clement A. Walker, M. D., Boston, Mass.....	1879-1882
John H. Callender, M. D., Nashville, Tenn.....	1882-1883
John P. Gray, M. D., Utica, N. Y.....	1883-1884
Pliny Earle, M. D., Northampton, Mass.....	1884-1885
Orpheus Everts, M. D., Cincinnati, Ohio.....	1885-1886
H. H. Buttolph, M. D., Short Hills, N. J.....	1886-1887
Eugene Grissom, M. D., Raleigh, N. C.....	1887-1888
John B. Chapin, M. D., Philadelphia, Pa.....	1888-1889
W. W. Godding, M. D., Washington, D. C.....	1889-1890
H. P. Stearns, M. D., Hartford, Ct.....	1890-1891
Daniel Clark, M. D., Toronto, Canada.....	1891-1892
J. B. Andrews, M. D., Buffalo, N. Y.....	1892-1893
John Curwen, M. D., Warren, Pa.....	1893-1894
Edward Cowles, M. D., Somerville, Mass.....	1894-1895
Richard Dewey, M. D., Wauwatosa, Wis.....	1895-1896
Theophilus O. Powell, M. D., Milledgeville, Ga.....	1896-1897
Richard M. Bucke, M. D., London, Ontario.....	1897-1898
Henry M. Hurd, M. D., Baltimore, Md.....	1898-1899
Joseph G. Rogers, M. D., Logansport, Ind.....	1899-1900
Peter M. Wise, M. D., New York, N. Y.....	1900-1901
Robert J. Preston, M. D., Marion, Va.....	1901-1902
G. Alder Blumer, M. D., Providence, R. I.....	1902-1903
A. B. Richardson, M. D., Washington, D. C. } .. (died before taking office)	
A. E. Macdonald, M. D., New York, N. Y. } ..	1903-1904
T. J. W. Burgess, M. D., Montreal, Canada.....	1904-1905
C. B. Burr, M. D., Flint, Mich.....	1905-1906
Charles G. Hill, M. D., Baltimore, Md.....	1906-1907
Charles P. Bancroft, M. D., Concord, N. H.....	1907-1908
Arthur F. Kilbourne, M. D., Rochester, Minn.....	1908-1909
William F. Drewry, M. D., Petersburg, Va.....	1909-1910
Charles W. Pilgrim, M. D., Poughkeepsie, N. Y.....	1910-1911
Hubert Work, M. D., Pueblo, Col.....	1911-1912
James T. Searcy, M. D., Tuscaloosa, Ala.....	1912-1913
Carlos F. MacDonald, M. D., New York, N. Y.....	1913-1914

SECRETARIES OF THE ASSOCIATION

Thomas S. Kirkbride, M. D., Philadelphia, Pa.....	1844-1852
H. H. Buttolph, M. D., Short Hills, N. J.....	1852-1854
Charles H. Nichols, M. D., Washington, D. C.....	1854-1858
John Curwen, M. D., Warren, Pa.....	1858-1893
Henry M. Hurd, M. D., Baltimore, Md.....	1893-1897
C. B. Burr, M. D., Flint, Mich.....	1897-1904
E. C. Dent, M. D., New York, N. Y.....	1904-1906
Charles W. Pilgrim, M. D., Poughkeepsie, N. Y.....	1906-1909
Charles G. Wagner, M. D., Binghamton, N. Y.....	1909-

NOTE.—In the early career of the Association there appears to have been no regularly elected Treasurer. This function, however, devolved upon Dr. Curwen at some time during his incumbency and has since been a regular duty of the Secretary.

MEETING PLACES OF ASSOCIATION OF MEDICAL SUPERINTENDENTS OF AMERICAN IN- STITUTIONS FOR THE INSANE

1st 1844	Philadelphia, Pa., Jones Hotel, Oct. 16, 1844.	34th 1880	Philadelphia, Pa.
	Pres., Dr. Samuel B. Woodward.	35th 1881	Toronto, Ont.
	Vice-Pres., Dr. Samuel White.	36th 1882	Cincinnati, Ohio.
	Sec.-Treas., Dr. Thomas S. Kirkbride.	37th 1883	Newport, R. I.
	1845 No meeting held.	38th 1884	Philadelphia, Pa.
2d 1846	Washington, D. C.	39th 1885	Saratoga, N. Y.
	1847 No meeting held.	40th 1886	Lexington, Ky.
3d 1848	New York, N. Y.	41st 1887	Detroit, Mich.
4th 1849	Utica, N. Y.	42d 1888	Fortress Monroe, Va.
5th 1850	Boston, Mass.	43d 1889	Newport, R. I.
6th 1851	Philadelphia, Pa.	44th 1890	Niagara Falls, N. Y.
7th 1852	New York, N. Y.	45th 1891	Washington, D. C.
8th 1853	Baltimore, Md.	46th 1892	Washington, D. C.
9th 1854	Washington, D. C.		New constitution adopted.
10th 1855	Boston, Mass.		Name changed to American Medico-Psychological Ass'n.
11th 1856	Cincinnati, Ohio.	47th 1893	Chicago, Ill.
12th 1857	New York, N. Y.	50th 1894	Philadelphia, Pa.
13th 1858	Quebec, Que.		Fiftieth year since foundation.
14th 1859	Lexington, Ky.		Semi-centennial.
15th 1860	Philadelphia, Pa.		Number of meetings changed.
	1861 No meeting held on account of the disturbed condition of the country.		Proceedings published in separate volume.
16th 1862	Providence, R. I.	51st 1895	Denver, Col.
17th 1863	New York, N. Y.	52d 1896	Boston, Mass.
18th 1864	Washington, D. C.	53d 1897	Baltimore, Md.
19th 1865	Pittsburgh, Pa.	54th 1898	St. Louis, Mo.
20th 1866	Washington, D. C.	55th 1899	New York, N. Y.
21st 1867	Philadelphia, Pa.	56th 1900	Richmond, Va.
22d 1868	Boston, Mass.	57th 1901	Milwaukee, Wis.
23d 1869	Staunton, Va.	58th 1902	Montreal, Que.
24th 1870	Hartford, Conn.	59th 1903	Washington, D. C.
25th 1871	Toronto, Ont.	60th 1904	St. Louis, Mo.
26th 1872	Madison, Wis.	61st 1905	San Antonio, Tex.
27th 1873	Baltimore, Md.	62d 1906	Boston, Mass.
28th 1874	Nashville, Tenn.	63d 1907	Washington, D. C.
29th 1875	Auburn, N. Y.	64th 1908	Cincinnati, Ohio.
30th 1876	Philadelphia, Pa.	65th 1909	Atlantic City, N. J.
31st 1877	St. Louis, Mo.	66th 1910	Washington, D. C.
32d 1878	Washington, D. C.	67th 1911	Denver, Col.
33d 1879	Providence, R. I.	68th 1912	Atlantic City, N. J.
		69th 1913	Niagara Falls, Ont.
		70th 1914	Baltimore, Md.

GEOGRAPHICAL DISTRIBUTION

—OF—

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A

ALABAMA—THE ALABAMA INSANE HOSPITALS.

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Eugene D. Bondurant, M. D., 166 Conti St., Mobile.

ALASKA—

Arthur C. Delacroix, M. D., Douglas.

ARIZONA—STATE INSANE ASYLUM, Phoenix.

No members.

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ARKANSAS—STATE HOSPITAL FOR NERVOUS DISEASES, LITTLE ROCK.

James L. Greene, M. D., Superintendent.

R. F. Darnall, M. D., Clinical Director.

C

CALIFORNIA—AGNEW STATE HOSPITAL, AGNEW.

Leonard Stocking, M. D., Superintendent.

Clifford W. Mack, M. D., Assistant Physician.

CALIFORNIA STATE HOSPITALS.

F. W. Hatch, M. D., General Superintendent, Sacramento.

MENDOCINO STATE HOSPITAL, TALMAGE.

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Frederick E. Allen, M. D., Assistant Physician.

NAPA STATE HOSPITAL, NAPA.

Adelbert C. Matthews, M. D., First Assistant Physician.

John B. Rogers, M. D., Assistant Physician.

SOUTHERN CALIFORNIA STATE HOSPITAL, PATTON.

Franklin S. Wilcox, M. D., Assistant Superintendent.

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John G. Fitzgerald, M. D., Berkeley.

Elmer E. Stone, M. D., San Francisco.

Gilbert V. Hamilton, M. D., Montecito.

Edward W. King, M. D., San Francisco.

Daniel D. Lustig, M. D., San Francisco.

James H. McBride M. D., 489 Bellefontaine St., Pasadena.

J. W. Wherry, M. D., Los Gatos.

Alonzo P. Williamson, M. D., 842 N. Second St., Santa Monica.

Melvin J. Rowe, M. D., Monrovia.

COLORADO—COLORADO STATE HOME AND TRAINING SCHOOL FOR MENTAL DEFECTIVES, RIDGE.

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Frank T. Stevens, M. D., Colorado Springs.

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Henry S. Noble, M. D., Superintendent.

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Arthur B. Coleburn, M. D., Assistant Physician.

J. M. Keniston, M. D., Assistant Physician.

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Henry M. Pollock, M. D., Superintendent.

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F

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I

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J. T. Rooks, M. D., Assistant Physician.

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T. L. Long, M. D., Assistant Physician.

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Rose A. Russell, M. D., Assistant Physician.

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MT. PLEASANT STATE HOSPITAL, MT. PLEASANT.

Charles F. Applegate, M. D., Superintendent.

Clara Eirley, M. D.

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Wm. D. Runyon, M. D., Assistant Physician.

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Gershom H. Hill, M. D., Superintendent.

G. A. Chilgren, M. D., 406½ Jefferson St., Burlington.

Mary Lawson Neff, M. D., Des Moines.

W. S. Osborn, M. D., Des Moines.

Frank T. Seybert, M. D., 532 First Ave., Council Bluffs.

Tom B. Throckmorton, M. D., Des Moines.

K

KANSAS—OSAWATOMIE STATE HOSPITAL, OSAWATOMIE.

L. L. Uhls, M. D., Superintendent.

H. L. Goss, M. D., Assistant Physician.

GEOGRAPHICAL DISTRIBUTION.

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CONSTITUTION.

ARTICLE I.

This organization shall be known as the AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, this name being adopted in 1892 by "The Association of Medical Superintendents of American Institutions for the Insane," founded in 1844.

ARTICLE II.

The object of this Association shall be the study of all subjects pertaining to mental disease, including the care, treatment, and promotion of the best interests of the insane.

ARTICLE III.

There shall be four classes of members: (1) Active members, who shall be physicians, resident in the United States and British America, especially interested in the treatment of insanity; (2) Associate members; (3) Honorary members; and (4) Corresponding members.

ARTICLE IV.

The officers of the Association shall consist of a President, Vice-President, Secretary—who shall also be the Treasurer—three Auditors, and twelve other members of the Association to be called Councilors; all of these officers together shall constitute a body which shall be known as the Council.

NOTE.—The Association of Medical Superintendents of American Institutions for the Insane was founded in 1844 by the original thirteen members. In 1891, when its membership had increased to more than two hundred, it was proposed, at the annual meeting of that year in Washington, to form a better organization of the Association—its work having previously been done under the somewhat unstable rules of custom and a few resolutions scattered through its records. The proposition was agreed to, and at the annual meeting in Washington, in 1892 there was unanimously adopted the following Constitution and By-Laws, with the change of name to the AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

ARTICLE V.

The Active members of the Association shall include all past and present medical superintendents named in the official list published for 1892 of members of "The Association of Medical Superintendents of American Institutions for the Insane"; the Honorary members shall include those so designated in that list; the Associate members shall include all the assistant physicians named in the same list; it being provided that said list shall be corrected by the Council, as may be necessary to carry out the intention of the Constitution as to the continuance of existing membership.

Every candidate for admission to the Association hereafter as an Active member shall be proposed to the Council, in writing, in an application addressed to the President, at any annual meeting preceding the one at which the election is held. Honorary, Associate, or Corresponding members shall be proposed to the Council, in writing, in an application addressed to the President, at least two months prior to the meeting of the Association. Every application of whatever class must include a statement of the candidate's name and residence, professional qualifications, and any appointments then or formerly held, and certifying that he is a fit and proper person for membership. In the case of a candidate for Active or Associate membership, the application shall be signed by three Active members of the Association; and by six Active members for the proposal of an Honorary or Corresponding member. The names of all candidates approved by a majority vote of members of the Council present at its annual meeting shall be presented on a written or printed ballot to the Association at its concurrent annual meeting, at least one session previous to that at which the election is made, which shall be by ballot at a regular session, and require a majority vote of the members present. Physicians who, by their professional work or published writings, have shown a special interest in the care and welfare of the insane, are eligible to Active membership. The only persons eligible for Associate membership are regularly appointed assistant physicians of institutions for the insane that are regarded to be properly such by the Council; and they are eligible for such membership only during the time they are hold-

CONSTITUTION.

ing such appointments. After holding such an appointment three years, an Associate member may become an Active member by making application, in writing, to the Council, and upon its approval, being elected in the manner heretofore prescribed.

ARTICLE VI.

Physicians and others who have distinguished themselves by their attainments in branches of science connected with insanity, or who have rendered signal service in philanthropic efforts to promote the interests of the insane, shall be eligible for Honorary membership.

Physicians not residents in the United States and British America, who are actively engaged in the treatment of insanity, may be elected Corresponding members.

Active members only shall be entitled to a vote at any meeting, or be eligible to any office. Honorary and Corresponding members shall be exempt from all payments to the Association.

ARTICLE VII.

Any member of the Association may withdraw from it on signifying his desire to do so in writing to the Secretary: *Provided*, That he shall have paid all his dues to the Association. Any member who shall fail for three successive years to pay his dues after special notice by the Treasurer shall be regarded as having resigned his membership, unless such dues shall have been remitted by the Council for good and sufficient reasons.

Any member who shall be declared unfit for membership by a two-thirds vote of the members of the Council present at an annual meeting of that body shall have his name presented by it for the action of the Association from which he shall be dismissed if it be so voted by two-thirds of the members present at its annual meeting.

ARTICLE VIII.

The Officers and Councilors shall be elected at each annual meeting. They shall be nominated to the Association on the second day of the annual meeting in the order of business of the first session of that day, by a committee appointed for that purpose by the President; and the election shall take place immedi-

ately. The election shall be made as the meeting may determine, and the person who shall have received the highest number of votes shall be declared elected to the office for which he has been nominated.

The President, Vice-President, the Secretary and Treasurer, and Auditors shall hold office for one year or until the beginning of the term for which their successors are elected. One Auditor shall be elected for one year, one for two years, and one for three years. The Secretary and Treasurer and one Auditor are eligible for re-election. At the first election of Councilors, four members shall be elected for one year, four for two years, and four for three years; and thereafter four members shall be elected each year to hold office three years, or until their successors are elected. The President, Vice-President, one Auditor, and the four retiring Councilors are ineligible for re-election to their respective offices for one year immediately following their retirement. All the Officers and Councilors shall enter upon their duties immediately after their election, excepting the President and Vice-President. When any vacancies occur in any of the offices of the Association, they shall be filled by the Council until the next annual meeting.

A quorum of the Council shall be formed by six members; and of the Association by twenty Active members.

ARTICLE IX.

The President and Vice-President for the year shall enter on their duties at the close of the business of the annual meeting at which they are elected. The President shall prepare an inaugural address to be delivered at the opening session of the meeting. He shall preside at all the annual or special meetings of the Association or Council, or in his absence at any time, the Vice-President shall act in his place.

The Secretary and Treasurer shall keep the records of the Association and perform all the duties usually pertaining to that office, and such other duties as may be prescribed for him by the Council; and under the same authority he shall receive and disburse and duly account for all sums of money belonging to the Association. He shall keep accurate accounts and vouchers of all his receipts and payments on behalf of the Association, and of

CONSTITUTION.

all invested funds, with the income and disposition thereof, that may be placed in his keeping, and shall submit these accounts, with a financial report for the preceding year, to the Council at its annual meeting. Each annual statement shall be examined by the Auditors, who shall prepare and present at each annual meeting of the Association a report showing its financial condition. The Council shall have charge of any funds in the possession of the Association, and which shall be invested under its direction and control. The Council shall keep a careful record of its proceedings, and make an annual report to the Association of matters of general interest. The Council shall also print annually the proceedings of the meetings of the Association and the reports of the Treasurer and Auditors.

The Council is empowered to manage all the affairs of the Association, subject to the Constitution and By-Laws; to appoint committees from the membership of the Association, and spend money out of its surplus funds for special scientific investigations in matters pertaining to the objects of the Association, to publish reports of such scientific investigations; to apply the income of special funds, at its discretion, to the purposes for which they were intended. The Council may also engage in the regular publication of reports, papers, transactions, and other matters, in annual volume, or in a journal, in such manner and at such times as the Council may determine, with the approval of the Association.

ARTICLE X.

Amendments to the Constitution and By-Laws shall be taken up for consideration at the first session of the second day of any annual meeting, and may be made by a two-thirds vote of all the members present: *Provided*, That notice of such proposed amendments be given in writing at the annual meeting next preceding. It shall be the duty of the Secretary to send to all the members a copy of any proposed amendment at least three months previous to the meeting when the action is to be taken.

BY-LAWS.

ARTICLE I.

The meetings of the Association shall be held annually. The time and place of each meeting shall be named by the Council, and reported to the Association for its action at the preceding meeting. Each annual meeting shall be called by printed announcements sent to each member at least three months previous to the meeting.

The Council shall hold an annual meeting concurrent with the annual meeting of the Association; and the Council shall hold as many sessions and at such times as the business of the Association may require.

Special meetings of the Council may be called by the order of the Council. The President shall have authority at any time, at his own discretion, to instruct the Secretary to call a special meeting of the Council; and he shall be required to do so upon a request signed by six members of the Council. Such special meetings shall be called by giving at least four weeks' written notice.

ARTICLE II.

Each and every Active and Associate member shall pay an annual tax to the Treasurer, the amount to be fixed annually by the Council, not to exceed five dollars for an Active member, or two dollars for an Associate member.

ARTICLE III.

The order of business of each annual meeting of the Association shall be determined by the Council, and shall be printed for the use of the Association at its meeting. The Council shall also make all arrangements for the meetings of the Association, appointing such auxiliary committees from its own body, or from other members of the Association, and making such other provisions as shall be requisite, at its discretion.

NOTE.

The accompanying volume, containing the proceedings, papers, and discussions of the American Medico-Psychological Association at its Sixty-ninth Annual Meeting, is printed by the Council with the approval of the Association.

CHARLES G. WAGNER,
Secretary.

BINGHAMTON, N. Y.,
March, 1914.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

PROCEEDINGS OF THE SIXTY-NINTH ANNUAL MEETING.

NIAGARA FALLS, CANADA, TUESDAY, June 10, 1913.—
FIRST SESSION.

The Association convened at 10 a. m., in the Convention Hall of the Clifton Hotel, Niagara Falls, Canada, and was called to order by the President, Dr. James T. Searcy, of Tuscaloosa, Ala.

THE PRESIDENT.—*Ladies and Gentlemen:* The American Medico-Psychological Association will please come to order. I have the honor and pleasure of introducing to you the Hon. Charles C. Cole, Mayor of Niagara Falls, Ont., who will deliver the address of welcome. (Applause.)

MAYOR COLE.—*Mr. President, Ladies and Gentlemen, Members of the American Medico-Psychological Association:* I assure you it affords me a great deal of pleasure to have the opportunity of welcoming you to this well-known city of Niagara Falls. Words do not afford me proper expression of the pleasure I feel on this occasion. I know that you gentlemen, some of you, have come here from long distances, and I hope and trust that you will appreciate the privileges and opportunities which exist here. I may say that with ideal weather—because we have ordered this weather especially for this occasion—with ideal conditions and ideal surroundings, I trust that you will all enjoy the privileges and opportunities which are afforded here at Niagara Falls. I once heard of a medical doctor who had associated with him a young student whom he always took with him when visiting his patients. One day he, the doctor, being exceedingly busy, sent the student on ahead to visit one of his patients, a wealthy citizen of the town, saying that he would call later on himself. In the meantime the student called to see the patient and diagnose the cause of his ill health. The young student being somewhat practical, saw the gentleman and told him that he was not suffering from any particular illness that called for any special medical treatment. The physician coming in later on, the student told him what he had done. Upon hearing what he had told the patient, the doctor immediately said, "Why, young man, you must have made a mistake. You have not taken into consideration your surroundings; do you not see these handsome paintings on the walls; do you not see these Persian rugs on the floor; have you not seen the beautiful marble staircase, and other evidences of wealth here? Why, you cannot

help but see that there is a tremendous congestion of things and it is our duty to relieve it."

Now, gentlemen, I want to call your attention to the surroundings here and I hope and trust that while you are here the demands of your profession will not prevent you from enjoying your surroundings and privileges, for I assure you that there are very many of them and they are at your service. I may say here that the power companies, of which we have three in our vicinity, have asked me to extend to you a cordial welcome to visit their several plants, especially the Ontario Power Company and the Canadian-Niagara Power Company, during the time of your stay, that you may look at the tremendous construction and see something of the great power that is afforded here at Niagara Falls. We not only have our own power for the benefit of the greater part of Ontario, but for a large section of the United States, and I want to say, gentlemen, I trust that while you look at these great Falls of Niagara that you will one and all, as you witness their tremendous power and energy, take to yourselves somewhat of the power and energy exhibited there, to aid you in advancing the great cause with which you are all associated, for I believe and realize that the profession which you have chosen as a walk in life—the one of attending to the mental and physical weaknesses of humanity—is one of the greatest that human mind can devote their lives to.

I have asked a representative of our Medical Association from Kingston to come up later, and he will extend to you a welcome from the Medical Association. In the meantime I want to again express my great pleasure in having an opportunity of extending to you a hearty welcome to the Power City of the world—Niagara Falls. (Applause.)

THE PRESIDENT.—Mayor Cole, I wish to extend to your Honor the thanks of our Association for your cordial welcome. We are glad to be here; we are pleased to be on the Canadian side, for it is a very attractive side of the river. The river itself divides unequally—most attracted to the Canadian side.

You have not only here a city of progressive improvements, but you have around you much to admire. You have learned to yoke both water and lightning together, and are working them for the advantage of man.

I am glad to invite you to the meetings of this Association. You, as the Mayor of the city, will find something of interest on our program, if you will attend, I am sure.

I wish all the city officials could be present with us, and that we might get better acquainted with court officials everywhere. You have a class of criminals to deal with in court, who are often later sent to our institutions. Our patients all come through the courts. We are united in this way. I, therefore, hope that you and other officials of the city will find it possible to attend our sessions. (Applause.)

THE PRESIDENT.—We will now hear the report of the Committee of Arrangements, Dr. W. M. English, Chairman.

DR. ENGLISH.—*Mr. President, Ladies and Gentlemen:* It is needless for your Committee to refer to the many beauties of this world-renowned resort, concerning which we are to have a most interesting address this evening from one who, owing to his long association with its historic points and history, could entertain us for hours. We have thought well not to provide any extensive program of entertainment, but have the lecture this evening in place of a banquet or reception, and will be pleased in any way possible to assist visitors in inspecting the power houses, etc., if they will apply to the hotel office, or members of this Committee. The address of Mr. F. H. Severance this evening will be on "The Niagara Region and Peace Centenary." We sincerely regret to report that at the last moment the speaker for Wednesday evening—the Hon. Mr. Hanna, Provincial Secretary of Ontario, in whose department are the hospitals for insane, the prisons and public charities—found that time did not afford for him to prepare a suitable address for this occasion and he has delegated Dr. Edward Ryan, of Kingston, to take his place. Mr. Hanna has, however, promised to be present at some portion of our sessions.

The display of work done in the various hospitals, as also that of the National Committee for Mental Hygiene, will, we hope, all be in place this afternoon and may be seen in the billiard room on the ground floor. The Lawn Bowling Club of this city, whose beautiful greens and club-house are situated on Victoria avenue, about ten minutes walk from the hotel, have sent us a cordial invitation to make use of their lawns, etc., at any time during our stay.

All of which is respectfully submitted.

W. M. ENGLISH,
Chairman Committee of Arrangements.

THE PRESIDENT.—The next in order is the report of the Council, which will be read by the Secretary.

REPORT OF THE COUNCIL TO THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

NIAGARA FALLS, JUNE 10, 1913.

The Council met on the evening of June 9, 1913, in the Council room of the Clifton Hotel, Niagara Falls, Canada.

The Council has received and transmits herewith the report of the Treasurer for the current year, a statement of the membership of the Association to date, and a list of candidates for active membership. This list was presented to the Association a year ago and the names contained therein are now submitted to the Association for final consideration:

Samuel T. Armstrong, M. D., Katonah, N. Y.; Charles A. Barlow, M. D., Spencer, W. Va.; T. B. Bass, M. D., Abilene, Tex.; A. Fitzhugh Beverly, M. D., Austin, Tex.; Abraham A. Brill, M. D., New York, N. Y.; George W. Brown, M. D., Williamsburg, Va.; S. Grover Burnett, M. D., Kansas City, Mo.; Louis Casamajor, M. D., New York, N. Y.; Frank L. Christian, M. D., Elmira, N. Y.; Eugen Cohn, M. D., Peoria, Ill.; William A. Crooks, M. D.,

Watertown, Ill.; E. J. Emerick, M. D., Columbus, O.; Ernest B. Emerson, M. D., Bridgewater, Mass.; James M. Forster, M. D., Toronto, Ont.; George H. Freeman, M. D., St. Peter, Minn.; Daniel H. Fuller, M. D., Boston, Mass.; William E. Gardner, M. D., Lakeland, Ky.; D. W. Griffin, M. D., Norman, Okla.; Arthur P. Hasking, M. D., Jersey City, N. J.; Ralph T. Hinton, M. D., Elgin, Ill.; W. M. Hotchkiss, M. D., Jamestown, N. D.; Robert Ingram, M. D., Cincinnati, O.; J. Allen Jackson, M. D., Philadelphia, Pa.; J. Ralph Jacoby, M. D., New York, N. Y.; G. G. Kineon, M. O., Gallipolis, O.; Arthur Clyde Knight, M. D., Warm Springs, Mont.; Charles G. Lyon, M. D., Binghamton, N. Y.; Mary Lawson Neff, M. D., Boston, Mass.; John Nevin, M. D., Jersey City, N. J.; C. A. Nevitt, M. D., Lexington, Ky.; M. P. Overholser, M. D., Nevada, Mo.; George Mitchell Parker, M. D., New York, N. Y.; R. H. Parsons, M. D., Mt. Holly, N. J.; Christopher J. Patterson, M. D., Troy, N. Y.; Stephen R. Pietrowicz, M. D., Chicago, Ill.; Herbert Wm. Powers, M. D., Wauwatosa, Wis.; William B. Pritchard, M. D., New York, N. Y.; H. V. A. Smith, M. D., Jersey City, N. J.; J. Anson Smith, M. D., Blackwood, N. J.; William G. Somerville, M. D., Memphis, Tenn.; Harry O. Spalding, M. D., Westborough, Mass.; Reeve Turner, M. D., New York, N. Y.; T. H. Weisenburg, M. D., Philadelphia, Pa.; B. F. Williams, M. D., Lincoln, Neb.; Edward H. Wiswall, M. D., Wellesley, Mass.; H. Walton Wood, M. D., Brookline, Mass.

The Council recommends the transfer of the following named associate members to the active class:

Frederick E. Allen, M. D., Talmage, Cal.; Isabel A. Bradley, M. D., Akron, O.; William W. Coles, M. D., Keene, N. H.; Hugh H. Dorr, M. D., Batesville, O.; William E. Gesregen, M. D., Belle Mead, N. J.; Gilbert V. Hamilton, M. D., Montecito, Cal.; Carl J. Hedin, M. D., West Pownal, Me.; H. A. La Moure, M. D., Pueblo, Col.; Charles G. McGaffin, M. D., Taunton, Mass.; C. R. McKinniss, M. D., Norristown, Pa.; A. L. Skoog, M. D., Kansas City, Mo.; Henry M. Swift, M. D., Portland, Me.; Ralph P. Truitt, M. D., Baltimore, Md.; William B. Cornell, M. D., Baltimore, Md.

The Council recommends that the following named physicians be elected to associate membership:

Paul J. Alspaugh, M. D., Massillon, O.; Clarence H. Bellinger, M. D., Binghamton, N. Y.; Sanger Brown, II, M. D., White Plains, N. Y.; Russell E. Blaisdell, M. D., Kings Park, N. Y.; Albert M. Cross, M. D., Crownsville, Md.; T. Grover De La Hoyde, M. D., Poughkeepsie, N. Y.; Ralph H. Dunning, M. D., Ogdensburg, N. Y.; Roger Dexter, M. D., Dannemora, N. Y.; Alan D. Finlayson, M. D., Warren, Pa.; Samuel Ginsburg, M. D., Ogdensburg, N. Y.; Edward W. Groll, M. D., Binghamton, N. Y.; Wirt C. Groom, M. D., Willard, N. Y.; George E. Hatcher, M. D., Nashville, Tenn.; John J. Harrington, M. D., Central Islip, N. Y.; Walter E. Lang, M. D., Allentown, Pa.; Hyman L. Levin, M. D., Ogdensburg, N. Y.; Edward F. Leonard, M. D., Jacksonville, Ill.; Thomas Littlewood, M. D., Gardner, Mass.; John Norfolk Morris, M. D., Sykesville, Md.; Mary A. Nickerson, M. D., Rochester, N. Y.; John Francis O'Brien, M. D., Taunton, Mass.;

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

Arthur K. Petery, M.D., Norristown, Pa.; Sarah G. Pierson, M.D., Rochester, N. Y.; Gordon Priestman, M.D., Willard, N. Y.; Thomas Asbury Ratliff, M.D., Dayton, O.; R. F. L. Ridgway, M.D., Harrisburg, Pa.; Hedley Victor Robinson, M.D., Verdun, Que.; John B. Rogers, M.D., Napa, Cal.; Arthur H. Ruggles, M.D., Providence, R. I.; Clarence L. Russell, M.D., Fishkill-on-Hudson, N. Y.; Eleanor B. Saunders, M.D., Columbia, S. C.; Arthur L. Shaw, M.D., Sonyea, N. Y.; Albert Warren Stearns, M.D., Boston, Mass.; Karl B. Sturgis, M.D., Augusta, Me.; Wm. N. Trader, Jr., M.D., Sonyea, N. Y.; A. W. Thomson, M.D., Poughkeepsie, N. Y.; B. R. Webster, M.D., Fishkill-on-Hudson, N. Y.; Lorne W. Yule, M.D., Logansport, Ind.; J. Berton Allen, M.D., Central Islip, N. Y.; George S. Amsden, M.D., White Plains, N. Y.; P. G. Borden, M.D., Buffalo, N. Y.; Barbara Curtis, M.D., Poughkeepsie, N. Y.; William T. Hanson, M.D., Arlington, Mass.; George F. Harris, M.D., Buffalo, N. Y.; Estelle H. Henderson, M.D., Marion, Va.; Clifford W. Mack, M.D., Pontiac, Mich.; Ralph G. Reed, M.D., Central Islip, N. Y.; Frederick P. Schenkelberger, M.D., Gowanda, N. Y.; Charles L. Vaux, M.D., Central Islip, N. Y.

The Council has received the following applications for active membership. In accordance with the constitution, final consideration of these will be deferred until next year:

Herman Morris Adler, M.D., Boston, Mass.; George T. Baskett, M.D., St. Peter, Minn.; Charles J. Carey, M.D., Sykesville, Md.; Sydney A. Dunham, M.D., Buffalo, N. Y.; John L. Eckel, M.D., Buffalo, N. Y.; Horace W. Frink, M.D., New York, N. Y.; Donald Gregg, M.D., Brookline, Mass.; J. Victor Haberman, M.D., New York, N. Y.; Alfred C. Kingsley, M.D., Phoenix, Ariz.; George E. Neuhaus, M.D., Denver, Col.; R. Montfort Schley, M.D., Buffalo, N. Y.; William H. Smithson, M.D., Jackson, Miss.; Irving J. Spear, M.D., Baltimore, Md.; S. S. Stack, M.D., Milwaukee, Wis.; Walter B. Swift, M.D., Boston, Mass.; John N. Thomas, M.D., Pineville, La.; Paul Waterman, M.D., Hartford, Conn.

The Council has received and accepts with regret the resignations of the following members:

W. Herbert Adams, M.D., New York, N. Y.; R. L. Willis, M.D., Crab Orchard, Ky.

The Council recommends that an honorarium of \$50 be paid to Mr. Frank H. Severance for his lecture on the Niagara Frontier, on Tuesday evening.

The Council also recommends that the Secretary be instructed to notify all members of the Association who are in arrears for dues covering a period of three years or more that if their dues are not paid by August 1, 1913, their names will be dropped from the next published list of members.

Respectfully submitted,

CHARLES G. WAGNER, *Secretary*.

THE PRESIDENT.—What will you do with the report of the Council?

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

On motion, which was duly seconded, the report of the Council was accepted and adopted, the names proposed for election to come up tomorrow morning.

The Secretary then read a statement of the membership of the Association.

The following is a statement of the membership of the American Medico-Psychological Association to date:

HONORARY MEMBERS.

Former number	21	
Died	1	
Present number		20

ACTIVE MEMBERS.

Former number	358	
Associate to active.....	24	
Admitted	23	
Active to associate.....	2	
Resigned	2	
Died	3	
Present number		398

ASSOCIATE MEMBERS

Former number	132	
Active to associate.....	2	
Admitted	95	
Associate to active.....	24	
Resigned	2	
Present number		203

Total membership	621
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THE PRESIDENT.—We will now hear the report of the Treasurer.

REPORT OF TREASURER, 1912-1913.

DEBITS.

Balance on hand June 1, 1912.....	\$2,646.10
Received for dues:	
Active members	1,790.00
Associate members	366.00
Advance dues	15.50
Refund, American Journal of Insanity.....	300.00
Interest on bank deposits.....	85.08
Gummed lists of members.....	6.50
Blackburn autopsies	4.13
American Journal of Insanity.....	3.00
Copy of Transactions.....	1.00
Discount on check.....	.10

\$5,217.41

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

CREDITS.

1912

June	3.	Expenses Hon. Herbert P. Bissell (Atlantic City meeting)	\$51.75
	8.	Postage	6.00
	8.	Mercereau Printery (circular letters).....	4.50
	15.	Stenographer's expenses (Atlantic City).....	49.65
July	2.	E. S. Graney, express.....	.81
	8.	Mercereau Printery (ballots).....	2.50
	24.	American Journal of Insanity (from G. H. Hill).....	3.00
Aug.	14.	Lord Baltimore Press, Transactions 1911.....	1,012.08
	14.	Stenographer's services (Atlantic City).....	75.00
	19.	Telegrams .....	.92
Sept.	12.	Mercereau Printery (envelopes and receipts).....	37.19
	14.	Lord Baltimore Press.....	3.50
Oct.	9.	O. P. Chase (stamped envelopes).....	21.08
Nov.	2.	Mercereau Printery (letter-heads).....	5.00
	2.	Henry M. Hurd, M. D. (Historical Committee).....	100.00
	7.	Pneumatic Stamp Co. (rubber stamp).....	.51
Dec.	24.	Clerical services	10.00

1913

Feb.	15.	Henry M. Hurd, M. D. (Historical Committee).....	100.00
	15.	O. P. Chase (stamped envelopes).....	21.08
Mar.	6.	Postage	13.00
	13.	Commercial Envelope and Box Co.....	6.61
Apr.	1.	Armory Press (preliminary programs).....	11.25
May	19.	Stenographer's services	75.00
	19.	Commercial Envelope and Box Co.....	5.88
	19.	Clerical services	30.00
	28.	Charles G. Wagner, M. D. (telegrams, carfare and messenger service)	3.00
	29.	Postage	8.40
	29.	Armory Press (programs, application blanks, registry cards and ballots).....	69.75
			<hr/>
			\$1,727.46

Balance on hand June 1, 1913, as follows:

Emigrant Industrial Savings Bank.....	\$1,782.00
City National Bank, Binghamton, N. Y.....	1,707.95

Total\$5,217.41

Respectfully submitted,

June 6, 1913.

CHARLES G. WAGNER, *Treasurer.*

On motion the report of the Treasurer was referred to the Auditors.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

THE PRESIDENT.—I will now call for the report of the editors of the AMERICAN JOURNAL OF INSANITY.

To the American Medico-Psychological Association: Mr. President and Members.—The AMERICAN JOURNAL OF INSANITY, as will be shown by the financial report, enters upon its seventieth year in a fairly prosperous condition. It has had no appropriation from the Association for the year just closed and has repaid to the Treasurer the sum of \$300.00 advanced the year previous, and closes with a balance in excess of the amount on hand at the close of the sixty-eighth volume.

The four numbers published of volume 69 comprise over 834 pages and contain in addition to the proceedings of the Association, published in full, abstracts from home and foreign journals, book reviews and editorial comments, forty-eight original contributions.

With six exceptions all the articles read at the last annual meeting that appear in the Volume of Transactions have appeared in the JOURNAL.

With this showing, and the possibility of publishing all the articles if the manuscript is placed in the editors' hands, the editors again respectfully suggest the discontinuance of the Annual Volume of Transactions—as an unnecessary reduplication of printing and an unnecessary and large expense to the Association. If a portion of the money now expended in printing the Transactions, about \$1000 annually, were devoted to the JOURNAL six numbers instead of four could be issued annually at the same cost to subscribers and to a considerable advantage in the way of increased receipts from advertising.

An extra number of Volume 69 is now in the hands of the printers, to contain the addresses read at the opening of the Phipps Psychiatric Clinic of the Johns Hopkins Hospital, and will be sent to all subscribers gratis.

Last year the editors requested permission to publish an index of the entire JOURNAL and the matter was referred to the Council, but as far as can be learned no action was taken. The request is respectfully renewed.

There are still many members of the Association who do not subscribe for the JOURNAL, though the rate has been reduced to members to \$3.00 per volume, and numerous institutions which do not subscribe.

It is hoped that the members will see the wisdom of aiding the JOURNAL, the property of the Association, by increasing its subscription list.

Respectfully submitted for the Editorial Board,

EDWARD N. BRUSH, *Managing Editor*.

THE PRESIDENT.—You have heard the report of the editors of the JOURNAL; what shall we do with it? The financial report, in accordance with the rules, goes to the Auditors.

DR. ENGLISH.—I move, Mr. President, that the matter of the discontinuance of the Annual Volume of Transactions, referred to in this report, be referred to the Council, but that otherwise the report be accepted.

DR. BRUSH.—I would like to ask that the request for the publication of the index to the JOURNAL be also referred to the Council.

On motion the report was accepted and the matters above mentioned referred to the Council.

THE PRESIDENT.—We will now have the report of the Committee on History of Institutional Care of the Insane in the United States and Canada, Dr. Hurd, Chairman.

DR. BLUMER.—I do not think Dr. Hurd has arrived yet. As a member of that Committee I would like to say that Dr. Hurd is the only one capable of making a report for the Committee, and as he will be here a little later I would ask that the report be deferred until then.

THE PRESIDENT.—The report will be called for later. You have made it a constitutional duty of the President to appoint at the first session of the meeting a Nominating Committee. It has been a precedent that a committee of three be appointed and I do not know of any reason why it should be increased. I appoint on that committee the following:

Dr. W. M. English, Hamilton, Ontario (Chairman); Dr. L. M. Jones, Georgia; Dr. Byron M. Caples, Wisconsin.

This committee will report tomorrow morning.

The next on the program is a recess for registration of members and visitors. Every member who is present and every visitor will please register.

The following members registered and were in attendance during the whole or a part of the meeting:

Abbot, E. Stanley, M. D., Pathologist and Assistant Physician, McLean Hospital, Waverley, Mass.

Allen, H. D., M. D., Superintendent Allen's Invalid Home, Milledgeville, Ga.

Ashley, Maurice C., M. D., Medical Superintendent Middletown State Homeopathic Hospital, Middletown, N. Y.

Baber, Armitage, M. D., Superintendent Dayton State Hospital, Dayton, O.

Bancroft, Charles P., M. D., Superintendent New Hampshire State Hospital, Concord, N. H.

Barlow, Charles A., M. D., Superintendent Second Hospital for the Insane, Spencer, W. Va.

Betts, Joseph B., M. D., Senior Assistant Physician Buffalo State Hospital, Buffalo, N. Y.

Beutler, W. F., M. D., Superintendent Milwaukee Asylum for Chronic Insane, Wauwatosa, Wis.

Blumer, G. Alder, M. D., Medical Superintendent Butler Hospital, Providence, R. I.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

Bond, Earl D., M. D., Clinical Director and Pathologist Danvers State Hospital, Hathorne, Mass.

Boyd, William A., M. D., Assistant Superintendent The Westport Sanitarium, Westport, Conn.

Briggs, Lloyd Vernon, M. D., Member Massachusetts State Board of Insanity, 64 Beacon St., Boston, Mass.

Brown, G. W., M. D., Superintendent Eastern State Hospital, Williamsburg, Va.

Brown, Sanger, M. D., Chief of Medical Staff Kenilworth Sanitarium, Kenilworth, Ill.

Brush, Edward N., M. D., Physician-in-Chief and Superintendent Sheppard and Enoch Pratt Hospital, Towson, Md.

Buchanan, J. M., M. D., Superintendent East Mississippi Insane Hospital, Meridian, Miss.

Burgess, T. J. W., M. D., Medical Superintendent Protestant Hospital for the Insane, Box 2280, Montreal, Que., Canada.

Busse, Edward P., M. D., Medical Superintendent Southeastern Hospital for the Insane, Madison, Ind.

Calder, D. H., M. D., Superintendent State Mental Hospital, Provo, Utah.

Caples, B. M., M. D., Superintendent Waukesha Springs Sanitarium, Waukesha, Wis.

Carey, Harris May, M. D., Superintendent Eastern Penna. State Institution for the Feeble-Minded and Epileptic, Spring City, Pa.

Carriel, H. B., M. D., Superintendent Jacksonville State Hospital, Jacksonville, Ill.

Carroll, Robert S., M. D., Medical Director Highland Hospital (Inc.), Asheville, N. C.

Chapin, John B., M. D. (Retired), Canandaigua, N. Y.

Chapman, Ross McC., M. D., Senior Assistant Physician Binghamton State Hospital, Binghamton, N. Y.

Collier, G. Kirby, M. D., First Assistant Physician Craig Colony for Epileptics, Sonyea, N. Y.

Copp, Owen, M. D., Superintendent Pennsylvania Hospital for Insane, 4401 Market St., Philadelphia, Pa.

Crumbacker, W. P., M. D., Superintendent Independence State Hospital, Independence, Ia.

Curry, Marcus A., M. D., Assistant Physician New Jersey State Hospital, Greystone Park, N. J.

Donohoe, George, M. D., Superintendent State Hospital for Inebriates, Knoxville, Ia.

Douglas, Albert E., M. D., Superintendent Central Hospital for Insane, Nashville, Tenn.

Elliott, Robert M., M. D., Superintendent Willard State Hospital, Willard, N. Y.

English, W. M., M. D., Superintendent Hospital for Insane, Hamilton, Ont., Canada.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

Evans, Britton D., M. D., Medical Director New Jersey State Hospital, Greystone Park, N. J.

Eyman, H. C., M. D., Superintendent Massillon State Hospital, Massillon, O.

Finlayson, Alan D., M. D., Assistant Physician Warren State Hospital, Warren, Pa.

Fish, Drury L., M. D., Physician Kankakee State Hospital, Kankakee, Ill.

Fletcher, Christopher, M. D., Senior Assistant Physician Buffalo State Hospital, Buffalo, N. Y.

Fordyce, O. O., M. D., Superintendent Athens State Hospital, Athens, O.

Forster, James M., M. D., Medical Superintendent Hospital for Insane, 999 Queen St., Toronto, Ont., Canada.

Frost, Henry P., M. D., Superintendent Boston State Hospital, Dorchester Centre, Mass.

Fuller, Solomon C., M. D., Pathologist Westborough State Hospital, Westborough, Mass.

Gilliam, Charles F., M. D., Superintendent Columbus State Hospital, Columbus, O.

Gordon, Alfred, M. D., 1430 Pine St., Philadelphia, Pa.

Gorrill, George W., M. D., First Assistant Physician Buffalo State Hospital, Buffalo, N. Y.

Goss, Arthur V., M. D., Superintendent Taunton State Hospital, Taunton, Mass.

Granger, William D., M. D., Physician Vernon House, Bronxville, N. Y.

Griffin, D. W., M. D., Superintendent Oklahoma Sanitarium, Norman, Okla.

Gundry, Richard F., M. D., Medical Director Richard Gundry Home, Catonsville, Md.

Hamilton, S. W., M. D., Senior Assistant Physician Utica State Hospital, Utica, N. Y.

Hammers, James S., M. D., Assistant Physician Danville State Hospital, Danville, Pa.

Hancker, William H., M. D., Superintendent, Delaware State Hospital, Farnhurst, Del.

Hanes, E. L., M. D., 748 Main St., E., Rochester, N. Y.

Harding, G. T., Jr., M. D., 240 E. State St., Columbus, O.

Harmon, F. W., M. D., Superintendent Longview Hospital, Cincinnati, Ohio.

Harrington, Arthur H., M. D., Superintendent State Hospital for the Insane, Howard, R. I.

Harris, Isham G., M. D., Medical Superintendent Mohansic State Hospital, Yorktown, N. Y.

Haviland, C. Floyd, M. D., First Assistant Physician Kings Park State Hospital, Kings Park, L. I., N. Y.

Hedin, Carl J., M. D., Superintendent Maine School for Feeble-Minded, West Pownal, Me.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

Henry, H. C., M. D., First Assistant Physician Central State Hospital, Petersburg, Va.

Herring, Arthur P., M. D., Secretary Maryland Lunacy Commission, 330 N. Charles St., Baltimore, Md.

Heyman, M. B., M. D., Assistant Superintendent Central Islip State Hospital, Central Islip, N. Y.

Hill, Charles G., M. D., Physician-in-Chief Mt. Hope Retreat, Baltimore, Md.

Hills, Frederick L., M. D., Superintendent Bangor State Hospital, Bangor, Me.

Hobbs, A. T., M. D., Medical Superintendent Homewood Sanitarium, Guelph, Ont., Canada.

Hoch, August, M. D., Director Psychiatric Institute, N. Y. State Hospitals, Ward's Island, New York City.

Hotchkiss, W. M., M. D., Superintendent North Dakota State Hospital for Insane, Jamestown, N. Dak.

Houston, John A., M. D., Superintendent Northampton State Hospital, Northampton, Mass.

Howard, Eugene H., M. D., Medical Superintendent Rochester State Hospital, Rochester, N. Y.

Hurd, Arthur W., M. D., Superintendent Buffalo State Hospital, Buffalo, N. Y.

Hurd, Henry M., M. D., Secretary Board of Trustees The Johns Hopkins Hospital, 1023 St. Paul St., Baltimore, Md.

Hutchings, Richard H., M. D., Medical Superintendent St. Lawrence State Hospital, Ogdensburg, N. Y.

Jones, L. M., M. D., Superintendent Georgia State Sanitarium, Milledgeville, Ga.

King, J. C., M. D., Superintendent Southwestern State Hospital, Marion, Va.

Kline, George M., M. D., Superintendent Danvers State Hospital, Hathorne, Mass.

Klopp, Henry I., M. D., Superintendent and Physician Homeopathic State Hospital, Allentown, Pa.

Helene, J. C. Kuhlmann, M. D., Assistant Physician Buffalo State Hospital, Buffalo, N. Y.

Lamb, Robert B., M. D., 447 Third Ave., Troy, N. Y.

La Moure, Chas T., M. D., Superintendent The Gardner State Colony, Gardner, Mass.

Langdon, F. W., M. D., Medical Director Cincinnati Sanitarium, 4003 Rose Hill Ave., Cincinnati, O.

Lawton, S. E., M. D., Superintendent Brattleboro Retreat, Brattleboro, Vt.

Lewis, Joseph M., M. D., Cleveland, Ohio.

Long, T. L., M. D., First Assistant Physician Cherokee State Hospital, Cherokee, Ia.

MacDonald, Carlos F., M. D., Physician-in-Charge Dr. MacDonald's House, Central Valley, N. Y. (Office Address) 15 E. 48th St., N. Y. C.

MacNaughton, Peter, M. D., Assistant Superintendent Hospital for Insane, Hamilton, Ont., Canada.

Mabon, William, M. D., Medical Superintendent Manhattan State Hospital, Ward's Island, New York City.

Matzinger, Herman G., M. D., 90 Soldier's Place, Buffalo, N. Y.

May, James V., M. D., Medical Member State Hospital Commission, Albany, N. Y.

McKinniss, C. R., M. D., Chief Resident Physician State Hospital, Dept. for Men, Norristown, Pa.

Mellus, Edward, M. D., Superintendent Newton Nervine, West Newton, Mass.

Meredith, H. B., M. D., Physician and Superintendent State Hospital for Insane, Danville, Pa.

Mitchell, H. W., M. D., Superintendent Warren State Hospital, Warren, Pa.

Moody, G. H., M. D., Superintendent Dr. Moody's Sanitarium, San Antonio, Tex.

Mitchell, J. C., M. D., Medical Superintendent Hospital for Insane, Brockville, Canada.

North, Charles H., M. D., Medical Superintendent Dannemora State Hospital, Dannemora, N. Y.

Orton, Samuel T., M. D., Clinical Director and Pathologist Worcester State Hospital, Worcester, Mass.

Palmer, H. L., M. D., Superintendent Utica State Hospital, Utica, N. Y.

Patterson, C. J., M. D., Physician-in-Charge Marshall Sanitarium, Troy, N. Y.

Payne, Guy, M. D., Medical Superintendent Essex County Hospital, Cedar Grove, N. J.

Peterson, Jessie M., M. D., Chief Resident Physician, Dept. for Women, State Hospital, Norristown, Pa.

Pettijohn, Abra C., M. D., Superintendent State Hospital No. 2, St. Joseph, Mo.

Pilgrim, Charles W., M. D., Medical Superintendent Hudson River State Hospital, Poughkeepsie, N. Y.

Potter, Frederick C., M. D., Third Assistant Physician State Hospital for Insane, Norristown, Pa.

Priddy, A. S., M. D., Superintendent Virginia State Epileptic Colony, Madison Heights (near Lynchburg), Va.

Purdum, H. D., M. D., Assistant Physician Springfield State Hospital, Sykesville, Md.

Rhein, John H. W., M. D., 1732 Pine St., Philadelphia, Pa.

Ricksher, Charles, M. D., Physician Kankakee State Hospital, Kankakee, Ill.

Robinson, W. J., M. D., Medical Superintendent Hospital for Insane, London, Ont., Canada.

Ross, Donald L., M. D., Medical Superintendent Connecticut Colony for Epileptics, Mansfield Depot, Conn.

Ryan, Edward, M. D., Superintendent Rockwood Hospital, Kingston, Ont., Canada.

Ryon, Walter G., M. D., Medical Inspector for State Hospital Commission of New York State, Albany, N. Y.

Scribner, Ernest V., M. D., Medical Superintendent Worcester State Hospital, Worcester, Mass.

Searcy, J. T., M. D., Superintendent Alabama Insane Hospitals, Tuscaloosa, Ala.

Searl, William A., M. D., Medical Director Fair Oaks Villa, Cuyahoga Falls, O.

Shanahan, William T., M. D., Medical Superintendent Craig Colony for Epileptics, Sonyea, N. Y.

Sharp, Edward A., M. D., 162 Allen St., Buffalo, N. Y.

Shaw, Arthur L., M. D., Third Assistant Physician Craig Colony for Epileptics, Sonyea, N. Y.

Shepherd, A. F., M. D., Member Ohio Board of Administration, Columbus, O.

Smith, Samuel E., M. D., Medical Superintendent Eastern Indiana Hospital for the Insane (Easthaven), Richmond, Ind.

Somers, Elbert M., M. D., Superintendent Long Island State Hospital, Brooklyn, N. Y.

Stedman, Henry R., M. D., Chairman Board of Trustees, Taunton State Hospital, Mass., Physician-in-Charge Bournewood Hospital, Brookline, Mass., South Street.

Stick, H. Louis, M. D., Superintendent Worcester State Asylum, Box 1178, Worcester, Mass.

Swift, Henry M., M. D., 655 Congress St., Portland, Maine.

Terflinger, F. W., M. D., Medical Superintendent Northern Hospital for Insane, Logansport, Ind.

Tiffany, William J., M. D., Senior Assistant Physician Binghamton State Hospital, Binghamton, N. Y.

Tuttle, George T., M. D., Medical Superintendent McLean Hospital, Waverley, Mass.

Veeder, Willard H., M. D., Senior Assistant Physician Rochester State Hospital, Rochester, N. Y.

Wade, J. Percy, M. D., Medical Superintendent Spring Grove State Hospital, Catonsville, Md.

Walker, Eloise, M. D., Woman Physician, Binghamton State Hospital, Binghamton, N. Y.

Walker, Irving Lee, M. D., Assistant Physician Rochester State Hospital, Rochester, N. Y.

Wentworth, Lowell F., M. D., Deputy Executive Officer State Board of Insanity, 36 State House, Boston, Mass.

Weston, Paul G., M. D., Pathologist State Hospital for Insane, Warren, Pa.

White, M. J., M. D., Medical Superintendent Milwaukee Hospital for Insane, Wauwatosa, Wis.

White, William A., M. D., Superintendent Government Hospital for the Insane, Washington, D. C.

Wilson, Wm. Tassie, M. D., Superintendent Hospital for Insane, Penetanguishene, Ont., Canada.

Woodbury, Frank, M. D., Secretary to Lunacy Commission of Penna., 717 Bulletin Bldg., 218 S. 16th St., Philadelphia, Pa.

Woodson, C. R., M. D., Physician-in-Chief and Superintendent Dr. C. R. Woodson's Sanitarium, St. Joseph, Mo.

Work, Hubert, M. D., Superintendent Woodcroft Hospital, Pueblo, Col.

Zeller, George A., M. D., Superintendent Peoria State Hospital, Peoria, Ill.

The following visitors and guests of the Association registered their names with the Secretary :

Abbot, Mrs. E. Stanley, Waverley, Mass.

Atkinson, Gordon T., M. D., Member Board of Managers Spring Grove State Hospital, Catonsville, Md.

Barber, W. C., M. D., Superintendent Simcoe Hall Sanitarium, Barrie, Ont., Canada.

Bernstein, Charles, M. D., Superintendent Rome Custodial Asylum, Rome, N. Y.

Beutler, Mrs. W. F., Wauwatosa, Wis.

Buchanan, Mrs. J. M., Meridian, Miss.

Busse, Helen, Madison, Ind.

Busse, Marie, Vincennes, Ind.

Carothers, T. R., M. D., Chairman Board of Regents, State Hospital for Insane, Rock Hill, S. C.

Carriel, Mrs. H. B., Jacksonville, Ill.

Chittenden, Arthur S., M. D., Binghamton, N. Y.

Chittenden, Mrs. Arthur S., Binghamton, N. Y.

Copp, Mrs. Owen, Philadelphia, Pa.

Dunham, Sydney A., M. D., Buffalo, N. Y.

Eckel, John L., M. D., 145 Allen St., Buffalo, N. Y.

Elliott, Mrs. Robert M., Willard, N. Y.

Elwood, Everett S., Secretary Committee on Mental Hygiene of State Charities Aid Assn., 105 East 22d St., New York City.

Evans, Britton Buckley, Greystone Park, N. J.

Forster, Mrs. J. M., Toronto, Ont., Canada.

French, Edward, M. D., Superintendent Medfield State Asylum, Harding, Mass.

Gundry, Master Richard, Catonsville, Md.

Harding, Mrs. G. T., Jr., Columbus, O.

Hatfield, Chas. F., Field Secretary Bureau of Conventions, Panama-Pacific Exposition, Ashland Block, Chicago, Ill.

Haviland, Mrs. C. Floyd, Kings Park, N. Y.

Hobbs, Mrs. A. T., Guelph, Ont., Canada.

Hodge, C. F., Professor Biology Clark University, Worcester, Mass.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

- Hotchkiss, Mrs. W. M., Jamestown, N. D.
Hutchings, Mrs. Richard H., Ogdensburg, N. Y.
Kelley, L. G., Vice-President Utah State Board of Insanity, Salt Lake City, Utah.
Klopp, Mrs. Henry I., Allentown, Pa.
La Moure, Mrs. Chas. T., Gardner, Mass.
MacDonald, Miss Elizabeth H., Hotel Margaret, Brooklyn, N. Y.
MacNeill, J. W., M. D., Superintendent Hospital for Insane, Battleford.
McCarty, Charles W., New York City.
McGarr, T. E., Secretary State Hospital Commission of New York, Albany, N. Y.
Mitchell, A. L., Hamilton, Ont., Canada.
Mitchell, Mrs. A. L., Hamilton, Ont., Canada.
Mitchell, Mrs. J. C., Brockville, Ont., Canada.
Mitchell, Mary P., M. D., Warren, Pa.
Parker, Hon. Fred. H., Member New York State Hospital Commission, Albany, N. Y.
Parkhurst, William L., Canandaigua, N. Y.
Reily, John A., M. D., Medical Superintendent S. California State Hospital, Patton, Calif.
Rockwell, A. E., M. D., Member Exec. Com. Mass. Society for Mental Hygiene, 248 Main St., Worcester, Mass.
Ryon, Mrs. Walter G., Albany, N. Y.
Schley, R. Montfort, M. D., 267 Elmwood Ave., Buffalo, N. Y.
Settlemeyer, W. L., M. D., Board of Regents, State Hospital for Insane, Gaffney, S. C.
Severance, F. H., Jewett Ave., Buffalo, N. Y.
Smith, R. D. Bruce, M. D., Inspector Hospitals and Public Charities for Ontario, Toronto, Ont., Canada.
Smith, Mrs. R. D. Bruce, Toronto, Ont., Canada.
Stack, S. S., M. D., Superintendent St. Mary's Hill, Milwaukee, Wis.
Stack, Mrs. S. S., Milwaukee, Wis.
Stead, John H., M. D., First Assistant Physician Hospital for Insane, London, Ont., Canada.
Stewart, Robert A., M. D., First Assistant Physician Mt. Pleasant State Hospital, Mt. Pleasant, Ia.
Viele, Sheldon T., Fidelity Bldg., Buffalo, N. Y.
Wilkins, S. Herbert, Chairman Trustees Danvers State Hospital, Salem, Mass.

NOTE.—The State Hospital Commission of New York State was represented by Commissioners James V. May, M. D., and Hon. Fred. H. Parker, with the Secretary, T. E. McGarr. The following former members of the Commission were also present: Carlos F. MacDonald, M. D., William L. Parkhurst, Sheldon T. Viele, William Mabon, M. D., and Charles W. Pilgrim, M. D.

THE PRESIDENT.—We will now have the memorial notices of deceased members.

The following memorial notices were read :

Dr. Thomas J. Mitchell, by J. M. Buchanan, M. D.; Dr. George H. Knight, by Allen R. Diefendorf, M. D. (by title).

THE PRESIDENT.—*Gentlemen:* It is a constitutional duty of the President that he shall make an annual address. I have been much embarrassed the whole year with the question of what I shall talk about. Now I will leave it to you to find out what I am talking about before I get through. I may occasionally get beyond my depth, but still I am going in boldly.

The President of the Association, James T. Searcy, M. D., then read his address, "Have we a Specialty?" which was greeted with much applause.

DR. WORK.—There is an ancient custom of this Association which prohibits the discussion of the President's address. Some of the present presiding officer's predecessors have felt a tremendous sense of relief over that custom, but the custom cannot, however, prevent the members from expressing their appreciation of this most excellent address. It is rare indeed for this Association to have the opportunity of listening to an address by a man who has had nearly half a century experience in this line of work. There are many doctors, or so-called doctors, in the world and many different schools of practice. We have in a sense matured in the practice of medicine in the present generation, but we cannot by our treatment prevent what threatens this nation. Our President has merely touched upon the dangers of the present-day problem, and that is the sociologic aspect of insanity. What we cannot cure may become necessary for us to endure, but by united effort we may be able to do something to prevent it. I wish to personally express my great appreciation of this mature address.

THE PRESIDENT.—I wish to thank Dr. Work for his kind words of appreciation.

Dr. Hurd has just come in. I will now ask him to read the report of the Committee on History of Institutional Care of the Insane in the United States and Canada.

REPORT OF COMMITTEE ON HISTORY OF THE INSTITUTIONAL CARE OF THE INSANE IN THE UNITED STATES AND CANADA.

To the American Medico-Psychological Association.—Gentlemen: The undersigned in behalf of the Committee appointed to prepare a history of the Institutional Care of the Insane in the United States and Canada would report:

That it has secured material and has nearly prepared a manuscript of the following:

PART I.—GENERAL HISTORY.

Chapter I.—The Early Care of the Insane is nearly completed.

Chapter II.—The Beginning of State Care and the conditions which made it necessary, etc., is completed.

Under this head is much valuable and interesting material respecting the early movement in the United States towards State institutions, including the epoch-making efforts of the Hon. Horace Mann and Miss Dix in Massachusetts, the commendable philanthropy of the Connecticut State Medical Society and the labors of Drs. Todd and Woodward and their associates; the report of Mr. T. R. Hazard in Rhode Island; the movement to establish corporate and semi-State institutions in Vermont, New Hampshire, Maryland; the establishment of State asylums in New York, Pennsylvania, New Jersey, Virginia, North Carolina, South Carolina, Georgia, Tennessee, Ohio, Kentucky, Illinois and Indiana. This chapter is full and possibly too much in detail for ultimate publication.

Chapter III.—The history of private institutional care has not yet been prepared. It seems essential that it should be prepared by some person who is interested in the work of private institutions, and who would be in a position to trace its development and its present status.

Chapter IV.—Reforms in methods of care of the insane, such as non-restraint, colonies, furloughs and experimental removals, industries, employment, amusements, etc., have received much attention.

Chapter V.—The Law of Insanity; methods of commitment and discharge, voluntary admissions, etc., have been carefully considered.

The laws of the different states, as far as possible, relating to insane have been consulted and also the pamphlet prepared by Mr. Koren, under the direction of the National Committee for Mental Hygiene, has given very valuable information. An attempt has been made to trace the evolution of the laws of commitment in the different states and a large amount of labor has been spent upon it. Summaries of the laws of the following states have been received: Alabama, California, Delaware, District of Columbia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Minnesota, New York, Ohio, Pennsylvania, Rhode Island and South Carolina.

There are interesting sub-sections on the care of the criminal insane, the care of the colored insane and the admission of voluntary patients.

It has been impossible, however, to find anyone to take up the medico-legal aspects of insanity.

Chapter VI.—Material has been collected for a chapter on the history of the American Medico-Psychological Association which will give a summary of what has been done by the Association to improve the treatment of the Insane. A sub-section of this contains a history of the JOURNAL OF INSANITY.

Chapter VII.—Development of Medical and Scientific Treatment is partially prepared. Dr. Cowles has promised a section on the Evolution of

Scientific Laboratories. There are also detailed accounts of one or more psychopathic hospitals.

Chapter VIII.—On the Statistics of Insanity has not yet been prepared.

PART II.—INSTITUTIONAL CARE OF THE INSANE IN THE STATES AND PROVINCES.

SECTION I.

Chapter I.—The general history of the development of the care of the insane in each state or province has been pretty generally secured. The details of the development of the state care, the establishment, enlargement of institutions for the colored insane, epileptics and criminals are quite full.

Chapter II.—General state statistics of the insane have not been attempted and there is reason to fear that it may not be possible to secure any reliable statistics in reference to the matter. The United States census is notoriously defective, and the local census of the different states generally covering different periods, it is found impossible to compare one state with another. I shall be very glad to have some suggestions as to how these statistics are to be handled.

Chapter III.—Is partially prepared. It contains, in addition to the special reforms and special institutions of different states, a section on the architectural development of buildings for the insane.

Chapter IV.—A careful study has been made of systems of control and management and the appointment of boards of managers and officers.

Chapter V.—A good many brief biographies of those who have been interested in psychiatry or men who have been prominent in philanthropy have been secured.

SECTION II.—THE SEPARATE PUBLIC INSTITUTIONS OF EACH STATE.

Chapter I.—Considerable material has been collected for the history of the care of the insane in most of the states; some of the information, however, is very meager and in some of the newer states large material is probably not available. In one state the superintendent of the State institution stated frankly that he could not secure any information about the early history of his institution. In many other institutions early reports have been lost or destroyed.

It seems desirable that some one person in each state be asked to co-operate in supplying details which are lacking in the manuscripts already in the hands of the committee. Many of the manuscripts are very full; others contain little information.

SECTION III.—PRIVATE INSTITUTIONS.

Little has been done in the way of histories of private institutions of the states or provinces.

Thus much for the United States.

DOMINION OF CANADA.

The work of preparing histories of the institutions in the Dominion of Canada has been very effectively undertaken by Dr. T. J. W. Burgess, who has undertaken to prepare a report which relates to Canada. He is a very busy and hard-worked man and ought to have the active co-operation and assistance of all the Canadian superintendents.

It is a matter of great regret to the Chairman of the Committee that it has not been feasible to bring to this session of the Association a completed manuscript. This is largely due to personal reasons which have prevented continuous work for the past two or three months. It is, however, the opinion of the Committee that it will be feasible to begin publication of the preliminary chapters during the coming autumn, which will probably fill the first volume.

The Committee would ask that the whole matter of publication be referred to the Council with power to act. There remains to the credit of the Committee several hundred dollars of the original continuing appropriation, which, with a small addition, will probably be sufficient to pay the expense of publishing one volume during the coming year.

Respectfully submitted,
HENRY M. HURD, *Chairman*.

DR. BLUMER.—Before a motion is made to receive and adopt this report of Dr. Hurd's—I cannot very well make such a motion myself, being a member of the Committee—I wish to say something which Dr. Hurd has left unsaid and which, in the nature of things, he could not very well say.

When Dr. Hurd retired from the superintendency of Johns Hopkins Hospital a year or two ago his friends hoped that he might enter upon a life of well-earned repose. Instead of that I find he is now probably working on this History harder than ever before in his life. When a member of this Association rose innocently one morning two years ago and made the motion that such a committee be formed, he had little idea, I apprehend, of the enormous task he was imposing upon someone. I believe there was only one man in this Association who would have been willing to undertake this work, and only one man who is really qualified to do it. I hope, therefore, that this Association will continue to make appropriations as Dr. Hurd and his committee may need and call for them. The mere work of reading and editing reports that come in is a herculean task, as you may well know; and I ask that Dr. Hurd may have what pecuniary assistance is needed to lighten his clerical duties. I would also like to suggest that the money of this Association could be put to no better purpose than to appoint a guardian over the person of Dr. Hurd to prevent him from working more than ten hours a day on this History and not more than eight hours on Sundays.

DR. BRUSH.—I can echo all that Dr. Blumer has said. I am in sufficiently close proximity to know that any time from 9 o'clock in the morning until 5 in the afternoon I can count on finding Dr. Hurd in his office. I know something of the magnitude of this work—the mass of material that has

accumulated and which it is necessary for him to go over. I rise to move a vote of thanks to Dr. Hurd for what has been accomplished, and for the report he has presented.

THE PRESIDENT.—You have heard the motion that a vote of thanks be given Dr. Hurd.

DR. MACDONALD.—I desire to second the motion and to emphasize the remarks of Dr. Blumer and Dr. Brush in regard to the importance of the work represented by Dr. Hurd. This is a voluminous and laborious task which he has undertaken and I fear, possibly, a thankless task. I do not believe there is another member of this Association who would be willing to carry out the work Dr. Hurd is doing. I feel that he should have assurance from this Association that we are behind him; that we are helping support him and sustain him with whatever pecuniary assistance he requires, and I would suggest that he need keep no data or itemized statements of these expenditures. I realize something of the amount of work he is doing, and I heartily second the motion of Dr. Brush.

THE PRESIDENT.—You have heard the motion that a vote of thanks be extended to Dr. Hurd for what he has already done and what he is going to do. I might state in this connection that the Council has already taken up the matter of financial reimbursement for Dr. Hurd, and stands ready to back him in anything he may need in this work.

Motion unanimously carried.

DR. WOODSON.—It is all very nice to have a vote of thanks, but I suggest, sir, that the chairman of this Committee be given liberal appropriations to compensate him for this work.

DR. HURD.—I enjoy doing this work very much and I should feel, if I were paid for it, that it would destroy all of the pleasure I find in the work. There is nothing so inspiring as the work that is being done in this country. It seems to me that there would be no more agreeable task than to get this work done in such a way that future generations can look it over and see what has been done in the past hundred years.

THE PRESIDENT.—I have been requested to announce that the Association has granted permission to Charles F. Hatfield, Secretary Bureau of Conventions, San Francisco, Cal., to say a few words to the Association.

Mr. Hatfield then extended an invitation to the American Medico-Psychological Association to hold its 1915 meeting during the Panama-Pacific Exposition in San Francisco, Cal.

On motion the meeting adjourned.

AFTERNOON SESSION.

THE PRESIDENT.—The Association will please come to order. The report of the Council is the first thing on the program.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

REPORT OF THE COUNCIL JUNE 10, 1913.

The Council met immediately following the morning session, and makes the following recommendations:

That Dr. Henry M. Hurd, Chairman of the Committee on History, be allowed \$500.00 in addition to the present appropriation, viz., \$300.00, which would make a total of about \$800.00, for the purpose of carrying on the work of publishing the History, as Dr. Hurd states that he will probably publish at least one volume this fall. Also that Dr. Hurd and Dr. Wagner be appointed a committee on publication of this History.

That the plan suggested by Dr. Brush in regard to the publication of the transactions of the Association in the AMERICAN JOURNAL OF INSANITY, be recommended to the Association for approval, and that the printing of the same be referred to Dr. Wagner and Dr. Brush, as a committee, with power.

Also that the Secretary be authorized to enforce a rule that if discussions of papers sent to members for revision are not returned to him within fifteen days they will not appear as a part of the transactions.

That an index to the AMERICAN JOURNAL OF INSANITY be published, and that the matter be referred to the Committee on Publication of the Transactions, viz., Drs. Wagner and Brush, with power to act; also that this index be furnished to those desiring it at cost.

The Council recommends that the following named physicians be elected to associate membership:

Elijah S. Burdsall, M. D., Middletown, N. Y.; George W. Davies, M. D., Cedar Grove, N. J.; Clara Eirley, M. D., Mt. Pleasant, Ia.; Hiram Lionel Horsman, M. D., North Grafton, Mass.; William E. Kelly, M. D., Middletown, N. Y.; George F. Sargent, M. D., Towson, Md.; J. G. Fowble Smith, M. D., Carroll Co., Md.; Lewis M. Walker, M. D., Medfield, Mass.; George B. Wolff, M. D., Towson, Md.; Drew M. Warden, M. D., Cedar Grove, N. J.

The Council has received the following applications for active membership. In accordance with the constitution final action will be deferred until next year:

W. C. Barber, M. D., Barrie, Ont., Canada; T. Merrick Bemis, M. D., Worcester, Mass.; Walter C. Haviland, M. D., Worcester, Mass.

Respectfully submitted,
CHARLES G. WAGNER, *Secretary*.

THE PRESIDENT.—You have heard these matters presented by the Council—they are before you for approval or disapproval.

Motion made and carried that the recommendation of the Council to appropriate \$800.00 for the work of publishing the History, and that Drs. Hurd and Wagner be appointed a Committee on Publication of the History, be accepted.

THE PRESIDENT.—The second recommendation is that the proceedings, papers and discussions shall be printed in the JOURNAL OF INSANITY, and that reprints of these articles, discussions and the proceedings of the Asso-

ciation, as they appear, shall be published as a volume of Transactions. The expense will be greatly reduced in this way and the volume of Transactions will appear very much the same as at present.

Motion made and carried that this recommendation be accepted.

THE PRESIDENT.—The third recommendation is that an Index to the AMERICAN JOURNAL OF INSANITY be published, and that the matter be referred to the Committee on Publication of the Transactions, Dr. Wagner and Dr. Brush, with power to act.

Motion made and carried that this recommendation be accepted and adopted.

THE PRESIDENT.—The names of the candidates for associate membership will lie over until tomorrow. The other names will be referred to the Council for final consideration next year.

The first three papers on the program relate to the same subject, and I am going to suggest that these papers be read and that the discussion will follow the third paper.

The following papers were read:

“Modern Problems with the Insane,” by L. Vernon Briggs, M. D., Boston, Mass.

“Occupation as a Remedial Agent in the Treatment of Mental Diseases,” by Arthur V. Goss, M. D., Taunton, Mass.

“Some Suggestions Regarding the Improvement of the Medical Service and the Care and Treatment of the Insane,” by Walter G. Ryon, M. D., Albany, N. Y.

THE PRESIDENT.—There is one more paper on the program for the afternoon session which we might have before we have the discussion.

Arthur H. Harrington, M. D., of Howard, R. I., then read a paper entitled “The Congregate Dining-room and its Management.”

These papers were discussed by Drs. MacDonald, Burgess, Eyman, Gilliam, E. H. Howard, Woodson, Stedman and Mellus.
Adjournment.

EVENING SESSION.

Mr. Frank H. Severance, Secretary of the Buffalo Historical Society, Buffalo, N. Y., delivered a lecture before the Association, entitled “The Niagara Falls Region and the Peace Centenary.” This lecture was largely attended by members and visitors and was greatly enjoyed.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

WEDNESDAY, JUNE 11, 1913, 10 A. M.

THE PRESIDENT.—The Association will please come to order.

The Council has had no meeting since yesterday and therefore has no report to make. The first thing in order is the election and transfer of members proposed yesterday. The Secretary will read the names.

This list is given in the first and second reports of the Council.

DR. WOODSON.—I move you that the Secretary be authorized to cast the ballot of the Association for their election as recommended by the Council.

Motion duly seconded and carried.

THE PRESIDENT.—The Secretary has cast the ballot of the Association and these physicians are elected and transferred as recommended.

We will now hear the report of the Nominating Committee, Dr. W. M. English, Chairman.

DR. ENGLISH.—We, your Committee, beg to nominate the following officers and members of the Council for the ensuing year:

For President, Carlos F. MacDonald, M. D., New York, N. Y.

For Vice-President, S. E. Smith, M. D., Richmond, Ind.

For Councilors: James V. Anglin, M. D., Fairville, N. B., Canada; Harris M. Carey, M. D., Spring City, Pa.; J. Percy Wade, M. D., Catonsville, Md.; J. M. Buchanan, M. D., Meridian, Miss.

For Auditors: for three years, H. C. Eyman, M. D., Massillon, O.; for one year, Elbert M. Somers, M. D., Brooklyn, N. Y. (to fill vacancy caused by promotion of Dr. S. E. Smith).

(Signed) W. M. ENGLISH, *Chairman*.

DR. WORK.—Mr. Chairman, I move the Secretary be instructed to cast the ballot of the Association for these names recommended by the Nominating Committee for the respective offices.

Motion unanimously carried.

THE PRESIDENT.—The Secretary announces that the ballot has been cast electing these officers for the ensuing year.

THE PRESIDENT.—The next is the report of the Auditors.

We, the Auditors, beg to report that we have examined the books and vouchers of the Secretary and Treasurer, and compared his records with the report submitted to the Association, and found everything correct. The same is true of the report submitted by the Editors of the AMERICAN JOURNAL OF INSANITY.

NIAGARA FALLS, ONT., JUNE 11, 1913.

(Signed) S. E. SMITH,
SANGER BROWN,
MAURICE C. ASHLEY,
Auditors.

DR. HURD.—I move the report of the Auditors be accepted.

Motion duly seconded and carried.

THE PRESIDENT.—The Chair will appoint as the Committee on Resolutions: Dr. Charles G. Hill, of Maryland; Dr. T. J. W. Burgess, of Canada, and Dr. G. H. Moody, of Texas.

Dr. Brush is the Chairman of the Committee on Immigration, appointed at the last meeting, and I believe that at this juncture it would be a good time for him to make a report. If there is no objection I will ask Dr. Brush to make that report.

REPORT OF COMMITTEE ON IMMIGRATION.

To the American Medico-Psychological Association: Mr. President and Members.—The Committee on Immigration, which was appointed by the American Medico-Psychological Association at the last meeting, met the representatives of a number of organizations interested in the same objects at the office of the National Committee for Mental Hygiene, November 16, 1912. The Chairman and Doctor Owen Copp represented the Committee.

Resolutions were adopted urging the enactment of practically the same amendments to the United States Immigration laws as those recommended at the meeting of this Association at Atlantic City. Four of six recommendations made were included in immigration bills which passed both houses of Congress. These bills contained other provisions, however, notably one providing for a literacy test, which resulted in a veto by President Taft. The President gave a public hearing on immigration bills, February 6, 1913. The Chairman represented this Committee at the hearing. Our recommendations were stated fully and received the strong approval of the President, who stated in his veto message that he regretted that it was impossible to sign a bill carrying these excellent provisions. At the hearing especial effort was made to make it plain that this Committee was interested only in better protection against the admission of insane and mentally defective immigrants and not in any policy of general restriction. This seemed especially desirable on account of the bitter controversy which arose over the restrictive sections in the immigration bills proposed.

A bill has been introduced in the Senate by Senator Dillingham (S. 2406), one by Senator Overman (S. 50) and one by Mr. Roddenberry (H. R. 1958) in the House of Representatives, which embody all the recommendations of this Committee. It seems very desirable that a Committee on this important subject should be continued and empowered to press the legislation recommended by the Association and authorized to go to Washington or elsewhere for conferences necessary. It is felt that the recommendations of this Association and of other bodies with similar objects have very great influence and will do more to obtain the legislation desired than any other factor. This was made very plain at the hearing given by the President in Washington and this view has been expressed by Senators and Congressmen.

Your Chairman wrote the Secretary of Commerce and Labor and the Chairmen of the Senate and of the House Committees having the matter in charge forwarding the resolutions adopted at Atlantic City last year by the Association and received courteous acknowledgment thereof, and later went to Washington for the purpose of interviewing these gentlemen and received assurances of their sympathy with the object of the Association and promises of support. As has been stated, the whole matter is still undecided, and in presenting this report it is also moved that a Committee with the same purposes and powers of the present Committee be continued.

Respectfully submitted,

EDWARD N. BRUSH.

THE PRESIDENT.—You have heard the report of the Committee on Immigration, and the motion of Dr. Brush that a committee of this organization be continued.

DR. WORK.—I wish to amend Dr. Brush's motion to read "that this committee be continued."

DR. WHITE.—The natural order would be a motion to accept the report of the Committee, and then I should most heartily favor seconding the motion to continue this Committee.

Motion unanimously carried.

THE PRESIDENT.—The next in order on the program is the report of the Committee on Applied Eugenics, Dr. Hubert Work, of Colorado, Chairman.

REPORT OF COMMITTEE ON APPLIED EUGENICS.

To the American Medico-Psychological Association: Mr. President and Members.—The appointment of a Committee on Applied Eugenics by this Association at its last meeting was in a sense prophetic. Evidently it was foreseen that this feature of social economics would attract unusual attention the ensuing year.

Perhaps no other topic of public interest has received the legislative, platform and club discussion during the year past as have the defective classes, their derelictions and limitations.

The Eugenics Record Office at Cold Springs Harbor, Long Island, established by Mrs. Harriman late in 1910, later fostered by Mr. Rockefeller and others, has evolved a board of scientific directors, comprising Doctors Alexander Graham Bell, Chairman, Wm. H. Welch, Lewellys F. Barker of Johns Hopkins, E. E. Southard of Harvard and Prof. Irving Fisher of Yale, with Dr. C. B. Davenport, secretary of the board and resident director.

The aim of the Eugenics Record Office is:

(1) "To promote researches in Eugenics that shall be of utility to the human race."

(2) "The study of the origin of, and the best methods of restricting, the strains that produce the defective and delinquent classes of communities."

(3) "To publish the result of these researches."

The fire-proof building that is to form the new home of the Record Office and protect its records is being rapidly completed. The purpose and procedure with the personnel of the board insure scientific accuracy with energetic prosecution of research to determine first cause; which, when published, will suggest its own remedy.

The tremendous Research Association which will naturally attach to this board may become the first potent organized influence in race evolution.

This board is doubtless the outgrowth of public sentiment. It is too new to be its cause. Unfortunately nothing has come from it before the application of that theory of Eugenics had engaged the public mind, aimed directly at summarily cutting off the line of descent.

To the exclusion of all its other phases and with a directness peculiar to the American conscience, legislative enactments authorizing sterilization have been proposed in Arizona, California, Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Michigan, Nebraska, New Jersey, New Mexico, Nevada, North Carolina, North Dakota, New York, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Virginia, Washington, West Virginia and Wisconsin, and became laws in California, Connecticut, Iowa, Indiana, Michigan, New Jersey, New York, Nevada and Washington.

Twenty-seven states have given legislative consideration to this subject, eleven having enacted sterilization laws.

Many legislatures associated with these bills marriage regulation features, while some considered this last feature independently.

Public school inspection has been adopted by boards of education in the large cities of the United States. A few city schools have attempted to segregate backward children in classes, chiefly as a protection to normal children.

Medical periodicals have given the subject unstinted space in the year past; the Utah Medical Journal established a Department of Eugenics with a staff of associate editors, while the research work being done in the Training School at Vineland is the crowning glory of this new science.

Our inquiries teach that the thoughtful middle classes are earnestly interested in Eugenics as applied to the human family, while the thoughtless extremes of society are interested only in generating material.

Society is renewed from below, it is from blood of the peasantry and our farms that men of affairs come and it is of vital importance to the nation that these sources be kept pure.

This Committee mailed a questionnaire into every state and was surprised to receive letters from Governors and others in public life, who were not addressed, but who saw our inquiries incidently. Requests for literature from members of several legislatures were received and complied with and many hospital Superintendents' reports devoted space to the subject.

The consensus of opinion from scientific thinkers on Eugenics teaches that the feeble-minded are the result of inherited defect.

That improvement may be confidently predicted in many, but restoration in none.

That whether defect be recessive or congenital, the trail of feeble-mindedness is transmitted with certainty.

That the rate of increase by propagation is more rapid than in normal people, and that the defective class is a self-perpetuating body.

That the feeble-minded female is about three times as likely to mate sexually as the male.

That the short life of the fatuous need not be expected to stay increase of defectives, because morons, and not they, are the propagators of type.

No one has been found who depreciates the menace of the feeble-minded in America. Many are surprised at the sudden pending of the evil, forgetting that heretofore they were hidden or destroyed through neglect and disease, as the insane were, until less than half a century ago, but now they are uncovered by census and public care to mature and multiply.

All who express themselves agree that limitation of offspring from defectives must be accomplished. A part by sterilization, others by colonization and again a number influenced by the fact that we can at present house but a small portion of those requiring segregation, suggest that only females should be admitted to institutions and they farmed out after the menopause.

It is not the province of this Committee to argue in favor of methods, but to report on the application of those suggested.

As between sterilization and colonization the students of Eugenics are divided. Logically viewed and shorn of sentiment, sterilization appeals as both effective and inexpensive.

That sentimentalism which sees in sterilization a license to licentiousness, inviting venereal disease, assumes a precience foreign to the feeble-minded.

Sterilization merely stipulates that mental defects be not extended in perpetuity, colonization as now operated puts a premium on them.

Colonization implies holding in custody for life both males and females; as practiced such are restrained intermittently, the females returning to be delivered of defective children.

It is the remedy of the idealist, that notoriously impractical branch of the human family which strives for the impossible and gets nothing.

A paternalism that fosters the growth of an evil is illy conceived and we might as well admit that our unsystematized methods of handling the feeble-minded suggest criminal stupidity.

As a nation we are mildly concerned about the social burden of the imbeciles we have, without giving a thought to the certainty that each one will multiply himself through offspring five, ten or twenty times. "The fertility of the helpless is alarming; the procreation of their kind seems to be their only industry."

We believe that neither sterilization nor colonization will meet the situation alone, but the advantages of both should be joined.

It would be impractical for a commission to canvas a community and compel sterilization of its children. The beneficence of the colony should first be employed and the advice of those skilled in the subject procured, after observation has been had.

Once lodged there the sexual menace could be eliminated under proper safeguard and many returned home, some to become useful members of the family, under its supervision. The colony or institution would then become a clearing-house, avoiding hasty action by inexperienced commissions and being further safeguarded by the government.

Sterilization is without influence on the individual, beneficial or harmful; the personal influence of it is negligible, but it is not he but his posterity that alarms us.

Now that intellect can be measured, youthful genius and imbecility need not be confused or the interruption of lines of genius feared by the timid.

Two per cent of our school children are incapable of taking their place in society because mentally deficient; New York City alone has 15,000 feeble-minded children in its schools. Allowing 500 to the colony, this would mean thirty institutions for that city or thirty times more than it now has.

There is little legislative interest manifest in those institutions the United States already has. The states having them provide for their other public institutions first and more liberally, while half the states do not have them at all. It is not believable that the states collectively will double their capacity for colonization, much less multiply them thirty or even ten times.

It is true that in about twenty years the insane in hospitals increased more than 100,000, due to awakened public interest in their care. It is true also that we are already caring for 200,000 insane and 20,000 feeble-minded in institutions specially designed for them, with an estimated additional 45,000 feeble-minded in almshouses, asylums and penal institutions. To extend public care to some 200,000 more, believed to exist in the United States, suggests a financial burden no other country than ours could contemplate.

It costs over thirty-two million dollars a year to care for the patients suffering from mental diseases in the public institutions in the United States. This is equal to the annual expenditure for the construction of the Panama Canal. The amount expended in 1910 for the care of the insane in public institutions exceeded the amount appropriated by Congress for the support of the executive, legislative and judicial departments of the federal government. To this great sum must be added the economic loss to the country through the withdrawal from productive labor of so many people in the prime of life.

"It has been ascertained that the average value to the community of an adult between the ages of 18 and 45 is \$700 a year. On this basis the economic loss to the country through insanity is over one hundred and thirty million dollars a year, which amount taken together with the annual institutional cost is more than one hundred and sixty-four million dollars, a sum equaling the entire annual value of the wheat, corn, tobacco, dairy and beef products exported from the United States."—*The Outlook*.

Eventually the tax-payers will supply the moving force designed to limit the increase of defectives, by that method promising the speediest relief.

Opposition to sterilization need not be expected from parents, many of whom would welcome it in preference to separation in a colony and for the additional reasons that possibility of procreation is prevented and often the child may assist about the house or earn a little. If our states had parenthood laws offering a choice between colonization of their defective offspring or sterilization with liberty, it would not antagonize as the compulsory enforcement of either would.

Now, however, authority to sterilize is obtainable only through the ephemeral political life of officeholders and they in turn are influenced by public sentiment only.

In the opinion of your Committee the problem of the feeble-minded is first in importance of all public questions and may never be solved in its entirety. Its limitation is all we can hope for, because it is so difficult for the human mind to understand mind and recognize defect. Against this hope stands that semi-religious sect which has for its shibboleth "Everything that is, is right." That part of the Christian church that fears the soul may exist without intellect. The mental defect that is covered by criminality; and the moron, who, because different from his family, is suspected of being a genius until his attempts to earn a livelihood show his defects as through a transparency.

Once the relation between feeble-mindedness, criminality and the lesser derelictions can be impressed upon the public, then only will the enormity of the subject become patent to it and its cost in dollars be appreciated.

Criminals are incarcerated because they represent danger to life and property.

Reform schools are supported to turn boys away from a criminal manhood.

The public must learn that the feeble-minded propagate themselves, also the prostitute, epileptic, insane and criminal, before it will co-operate to prevent their generation. A phase of mental defect not heretofore generally associated has horrified the reading public for a year past. Sociologists have long known that prostitutes as a class are mentally deficient, so weak in fact that they are colonized and rented by keepers, receiving for themselves scant maintenance only. The cunning procuress has enlisted the procurer, also a moral idiot, who boldly abducts from the streets those pliant enough to listen, and has incidentally advertised this traffic.

It is not low wage alone that lies back of our vice commissions' findings. We have no assurance that girls who become immoral while earning \$5.00 per week would remain virtuous if paid \$12.00 per week.

It is well known that the working girl is as moral as her sisters who are provided for; in itself evidence that the first cause of female degradation is not financial. There is a definite relation between a limited earning capacity and a low wage. Any arbitrary fixed minimum wage is a doubtful moral aid and an industrial impossibility. Sociologists searching for the

cause of poverty have given little thought to mental defect. Alcoholism, criminal instinct, environment and avaricious employers have each been attacked; passing over the inherent organization of the individual that craves alcohol, invites crime, selects environment and makes him unemployable.

Back of it all lies mental defectiveness, the principal asset of commercialized vice and not its putative parent, low wages.

The institutions already built for the feeble-minded have been designed in error; for the development of latent faculties and to graduate normal citizens from your children. We now know that these efforts have failed because mentality was not latent but absent.

Literary education of the feeble-minded is valueless. That gained by the defective cannot compete with that acquired by normal children because no stability of character is associated; but it often is an aid in criminality.

Abstract teaching is wasted energy. The defective brain may be impressed only by repeated bombardment of its centers by impressions received through association of the hands and eyes. Imitation is the schoolmaster of the feeble-minded and it is equally accessible from vicious and virtuous sources.

Your committee would suggest these postulates:

I. The first step in Applied Eugenics is sociologic and demands removal of the feeble-minded from the public schools and society.

II. That the feeble-minded learn as parrots do, by imitation, consequently text-book teaching is without value.

III. No males should be admitted to detention until all females of child-bearing age have been safeguarded.

IV. Colonization should be encouraged for the immediate relief of communities and sterilization must come for the relief of the colonies.

V. Schools and colonies should become clearing-houses from which to determine final disposition. Some should be apportioned to county farms, others returned to their homes, the impossible only becoming permanent residents because of criminal tendencies.

VI. The public should be earnestly advised that sterilization should never be regarded as punishment, because it does not punish and would be illogical if applied as a deterrent to those who do wrong from inability to appreciate the right. Its application should be urged as a preventive measure only.

Human Eugenics suggests a field limited only by the necessities, possibilities and hopes of humanity, and it demands for the race a better ancestry, made possible only by eliminating the unfit.

This new science must not only see to it that humanity be not overcome with its by-product, but it must provide opportunity for the normal born also.

Every child at birth is without either knowledge or character. If it lives it will develop both to a degree determined by its heredity and environment.

The influences of heredity are now beyond the pale of controversy. The exigencies of environment will determine the sociologic atmosphere, which

in turn gives direction to the evolution of the child, so that Applied Eugenics really means science applied to human life.

HUBERT WORK, *Chairman.*

H. M. CAREY,

CHAS. G. HILL,

Committee.

THE PRESIDENT.—You have heard the report of the Committee on Applied Eugenics. Although it is the report of the Committee, I will hold it open for discussion if anyone wishes to talk upon it.

DR. BRUSH.—I do not rise to discuss the paper. It is somewhat beyond me without a little more careful consideration, but before the paper is thrown open for discussion I wish to offer a motion that the report be accepted, and, accompanying that motion, that the report be accepted with thanks to the Chairman of the Committee. I have attended many meetings of the Association and have listened to many reports and I do not recall any report that has been so thorough and so carefully prepared and has given so much ground for thought. I move, therefore, that the report be accepted with thanks to the Chairman of the Committee.

DR. HUTCHINGS.—May I make an amendment to this motion, and that is that the Council be requested to immediately print and circulate this report among all classes of persons interested in the subject.

THE PRESIDENT.—You have heard the motion of Dr. Brush that this report be accepted with thanks, and that the Council take under consideration the publication of it.

DR. ENGLISH.—No one, I believe, has any higher appreciation of the value of this report than I have, and I agree most heartily with the gentleman who spoke of having it widely published.

DR. SANGER BROWN.—This report I regard as very able. It certainly reflects great credit upon the Committee which prepared it. It deserves wide dissemination. There was one point, if I am not mistaken, which ought to be altered, I think, before it receives the endorsement of this Society, and it is this: It is stated in effect that acquired imbecility is transmissible. At the present time, I believe, scientists are pretty nearly unanimous that this is not the case, and at any rate the statement is certainly open to argument and is not a main issue. The paper would serve its purpose better if that statement was omitted. Otherwise in the main I am in very hearty accord with the report.

DR. CAREY.—I do not think that a careful study of the report of this Committee, as read by the Chairman, will disclose the recommendation of any hasty action, as suggested in this report. The idea seems to be that the State or Provincial Government owes it to this particular type of individual, that they be properly cared for. Consequently, segregation is first recommended.

The report does not advocate compulsory sterilization, as applied in the few States having laws concerning it, but rather recommends it only as a

method of relieving the colonies after the individual is absolutely proven defective.

In my section of the country, we are advocating a procedure of this nature:

First, to compel the reporting of every single case of mental defect, making this just as necessary as it is at present to report a case of smallpox or scarlet fever.

Second, at the age of six, the individual is to be committed to an institution for a period of examination, of from six months to one year. Proved to be a defective, the individual is to be segregated for life, with this understanding that if, at the age of twenty, the parents can prove that they are in position to properly care for the individual, he or she may be discharged, providing that before this discharge an operation for the prevention of procreation shall and must be performed. If the parents are unwilling to have the operation performed, then the case must remain segregated.

I do not believe that the report, as presented by the Chairman, recommends any hasty action whatever, and I am sure that this august body will derive considerable benefit from this program.

DR. BLUMER.—May I call for the question on Dr. Brush's motion?

THE PRESIDENT.—Dr. Brush made the motion that this report of the Committee on Applied Eugenics be received, not adopted, and it was amended by the additional clause that it be submitted to the Council for publication. Now the question is not that this report be adopted, but that it be received and submitted to the Council for publication, if I understand Dr. Brush's motion.

DR. WOODSON.—I know of no more important issue before this or any other association than that so ably advocated by Dr. Work. This is not a legislative body; it is here as an educator. Dr. Work has given this paper great consideration and has presented one that should be read by men who have to make laws. Dr. Work's paper suggests a remedy. If it were to be voted on in a legislative body to become a law there might be some reason for delaying, but the sooner papers like this are put in the hands and in the minds of the people of America and the provinces of Canada the better it is for coming generations. There is no class of men on earth that is better calculated to know the evils and ill effects of the propagation of degenerates and of the unfit than this body, which is a representative body of physicians. The matter of getting it before the people may be discussed, if it can be gotten into the JOURNAL at once; if it can be taken into the State Journals of the various states; it can be taken into the *American Medical Association Journal*, even if Dr. Work has to be requested to re-read it. The members can take it up; if it can get into the hands of the Governors of the states, into the hands of the Senators and Representatives of the respective states, I apprehend it will do much good in educating people along this line. No man knows when this impure blood is going to cross with the best families and those who are striving the hardest to prevent it.

I am heartily in sympathy with the report, and the only thing I would urge would be to more speedily get it before the Legislators and Governors, and there is no reason why it should not be carried to both Houses of this National Government.

Dr. Brush's motion as amended was duly seconded and carried.

DR. MABON.—I would like to offer a motion upon this subject, viz., that a discussion of this subject be arranged for the next annual meeting of this Association; that sufficient time be allowed to discuss it properly, and I would suggest that a committee arrange a symposium on this subject to appear on the program for the meeting next year.

DR. WOODSON.—I move that Dr. Mabon be appointed as Chairman of that Committee.

THE PRESIDENT.—It has been moved that a committee be appointed to bring this subject up at the next meeting of the Association, of which Dr. Mabon shall be Chairman.

Which motion was duly seconded and carried.

THE PRESIDENT.—The next in order is a paper on "The Application of the Genetic Concept to Psychiatry," by Dr. Wm. A. White, of Washington, D. C.

Dr. White then read a paper as above.

THE PRESIDENT.—The Chair would appoint the following committee to arrange a symposium on Applied Eugenics for the next meeting: Wm. Mabon, M. D., of New York; Sanger Brown, M. D., of Illinois; Charles G. Hill, M. D., of Maryland; Thomas Salmon, M. D., of New York.

The next paper on the program is by Wm. L. Russell, M. D., of White Plains, N. Y., entitled "The Broadening Field of Practical Psychiatry." Dr. Russell is not present, and the Chair will take advantage of this fact and put in here a paper by Dr. Frank Woodbury, if there is no objection.

Dr. Woodbury then read "A Centennial Memorial Note" on Benjamin Rush, M. D., deceased.

THE PRESIDENT.—Unless there is some objection this paper can go on record in the Transactions.

The following papers were then read:

"Statistical Studies of the Insane," by James V. May, M. D., Albany, N. Y. Discussed by Drs. Henry M. Hurd, Salmon, Granger, Drewry and MacDonald.

"Psychology and the Medical School," by E. Stanley Abbot, M. D., Waverley, Mass.

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DR. HOCH.—The subject Dr. Abbot has brought up is of especial value to those of us who teach psychiatry in medical schools, and it seems to me, therefore, that this Association should make a definite recommendation. I should like to make the following motion: Since a knowledge of psychology is essential not only for the study of psychiatry and neurology, but for that of many disorders belonging in other fields of medicine, to say nothing of its importance for many social problems which the physician should understand, it is the sense of this Association that psychology should be introduced into the curriculum of all schools of medicine.

Which motion was duly seconded and carried.

DR. BLUMER.—I move you, Mr. President, that a committee of five be appointed by the Chair to investigate further the results, the present status and the future possibilities of the teaching of psychology to medical students, and to bring the importance of such teaching before other medical organizations and the medical schools.

Motion duly seconded and carried.

DR. BLUMER.—In order to spare the President any embarrassment growing out of my making this motion, I desire to say that I prefer not to serve on that committee, much as I approve of the motion I have made.

THE PRESIDENT.—I will appoint the following members on this committee: Dr. E. Stanley Abbot, of Massachusetts (Chairman); Dr. August Hoch, of New York; Dr. Shepherd I. Franz, of Washington, D. C.; Dr. Wm. A. White, of Washington, D. C., and Dr. C. W. Burr, of Pennsylvania.

THE PRESIDENT.—There will be a meeting of the Council immediately at the close of this session.

Adjournment.

AFTERNOON SESSION.

THE PRESIDENT.—The meeting will please come to order.
The report of the Council is in order.

REPORT OF THE COUNCIL JUNE 11, 1913.

The Council recommends the election of the following named physicians to the associate class: Mary Elizabeth Morse, M. D., Worcester, Mass.; Frederick C. Potter, M. D., Norristown, Pa.

The Council recommends the transfer from associate membership to the active class of Charles Ricksher, M. D., of Kankakee, Ill.

The Council also recommends the reinstatement as an active member of R. M. Phelps, M. D., of St. Peter, Minn., who was formerly a member of the Association.

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The Council has received the application for active membership of John A. Reilly, M.D., of Patton, Cal. According to the constitution, final consideration will be deferred until next year.

Respectfully submitted,
CHARLES G. WAGNER, *Secretary*.

On motion, duly seconded, the report of the Council was accepted and adopted.

THE PRESIDENT.—Dr. Hanes, who was to have read his paper at this time, resigns in favor of Dr. Hoch, who is next on the program. We will now ask Dr. Hoch for his paper.

Dr. Hoch then read his paper entitled "The Precipitating Mental Causes in the Constitutional Psychoses." Discussed by Drs. White and Hill.

THE PRESIDENT.—Just at this juncture I would like to introduce a matter. I have before me a communication from Mayor Cole, which I will read:

NIAGARA FALLS, CANADA, June 11, 1913.

The Mayor of the City of Niagara Falls has made arrangements with the International Railway for special cars to be at the Clifton Hotel to take the delegates to the American Medico-Psychological Association for a trip through Queen Victoria Park, where arrangements have been made to inspect the power plants of the Ontario Power Company and the Canadian Niagara Power Company. Then to continue the trip along the Upper River and Rapids to Chippawa, where the battle of Chippawa was fought; return down the river to Bridge street and through the city over the local street car line to Lundy's Lane Battle Grounds, which is only 200 yards from the car-line. After viewing the battle grounds the cars will return to the Clifton Hotel.

The Mayor would be pleased to have the Association name a date and time suitable to them on Thursday or Friday, so that he can carry out the above arrangements.

DR. BURGESS.—I move that we accept the invitation and go for this ride, which I am sure will be delightful, on Thursday afternoon, and have a session on Thursday evening instead of Thursday afternoon.

Which motion was duly seconded and carried.

THE PRESIDENT.—The Chair is a little concerned to know just what comes next. If Dr. Hanes wishes we will have his paper at this time.

Dr. Edward L. Hanes, of Rochester, N. Y., then read a paper entitled "The Psycho-Neuroses from the Psychiatrists' Point of View." Discussed by Drs. Burgess, White, Brush, Hill and Hanes in closing.

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THE PRESIDENT.—The next paper on the program is by Dr. C. A. Porteous, of Montreal.

DR. BURGESS.—Dr. Porteous is not present and he has asked me to read his paper.

Dr. Burgess then read a paper entitled "Report of a Case of Chorea Insaniens," by C. A. Porteous, M. D., of Montreal, Que.

THE PRESIDENT.—Dr. Porteous' paper is before you for discussion. It is the only paper from this side of the river.

DR. HILL.—I think this is a very good suggestion by Dr. Porteous, and I move you, sir, that a committee be appointed of different men, with Dr. White as chairman. This matter in proper hands to prepare a symposium should make at least one very interesting and profitable hour or two of discussion in our next meeting.

DR. ———.—I would suggest that this whole matter be referred to the Council. I think the Council can well take up this matter and we will hear what they have to say.

THE PRESIDENT.—It is suggested that the Program Committee can arrange a symposium on this subject; that properly belongs to the Committee on Program and no doubt they will do so.

As Dr. Fernald and Dr. McGaffin are both absent we will go on to the next paper on the program, by Dr. Arthur S. Chittenden, of Binghamton, N. Y.

Dr. Chittenden then read a paper entitled "Surgical Procedures on the Insane."

THE PRESIDENT.—If there is no discussion, this closes the program for the afternoon. There will be a meeting of the Council in this room tomorrow morning at 9.30 o'clock.

We will now adjourn until 8.30 this evening.

EVENING SESSION.

THE PRESIDENT.—The Association will please come to order. We have with us this evening Dr. Edward Ryan, of Kingston, Ont. I will ask Dr. English, Chairman of the Committee of Arrangements, to introduce Dr. Ryan.

DR. ENGLISH.—*Mr. President, Ladies and Gentlemen:* As you will notice by your program of the proceedings of the Association, the Hon. W. J. Hanna, Provincial Secretary of Ontario, was to have delivered the Annual Address, but owing to exigencies political and otherwise, in connection with his work, he has been unable to prepare, or take the time to prepare, what he thought would be a suitable address for an association of this kind. I may say that Mr. Hanna is at the head of our hospitals for the insane and

the general hospitals, and has made a wonderful advance in our provincial affairs, introducing the open wards, and now instead of having men locked up they are trusted to a very great extent; they are put to work on large areas of land, many learning trades and assisting to make men of them when they go out, and so are not likely to return to penal life. On that account we were especially anxious to have him here tonight. However, he has sent a most able representative in the person of Dr. Edward Ryan, Superintendent of Rockwood Hospital for the Insane, at Kingston, Ont., whom, I am sure, you will be pleased to hear.

Dr. Ryan then delivered his address.

THURSDAY, JUNE 12, 1913, 10 A. M.

The meeting was called to order by the President.

THE PRESIDENT.—The first thing in order is the report of the Council.

REPORT OF THE COUNCIL JUNE 12, 1913.

The Council recommends that the following named physicians be elected to associate membership:

Amos T. Baker, M. D., Riverdale, N. Y.; E. H. Cohoon, M. D., Howard, R. I.; Marcus A. Curry, M. D., Greystone Park, N. J.; Charles R. Lowe, M. D., Hospital, Ill.

The Council recommends the transfer from associate membership to the active class of Jessie M. Peterson, M. D., Norristown, Pa.

The Council has received the applications for active membership of O. Ross Nairn, M. D., Buffalo, N. Y., and Cornelius C. Whaley, M. D., of Pittsburgh, Pa. In accordance with the constitution final consideration will be deferred until next year.

Respectfully submitted,
CHARLES G. WAGNER, *Secretary*.

On motion, duly seconded, the report of the Council was accepted and adopted.

THE PRESIDENT.—The next order of business is the election and transfer of members proposed yesterday. The Secretary will read the names.

This list is given in the report of the Council for Wednesday.

DR. HURD.—I move these changes be made, and that the Secretary be requested to cast the ballot of the Association for the election and transfer of members as recommended by the Council.

Which motion was duly seconded and carried.

THE PRESIDENT.—The Secretary has cast the ballot of the Association as instructed and these physicians are duly elected members of the Association.

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DR. H. M. HURD.—I would like to give notice of motion of an amendment to the Constitution, under instruction of the Council yesterday, as follows:

AMENDMENT TO ARTICLE III.

Article III to be amended to read as follows:

"There shall be five classes of members: (1) Active members, who shall be physicians resident in the United States and British America, especially interested in the treatment of insanity; (2) Associate members; (3) Life members; (4) Honorary members; and (5) Corresponding members."

AMENDMENT TO ARTICLE V.

Add in line 4 after Active members, the following words: "Life members shall be such active members as shall have been members of the Association for a consecutive period of thirty (30) years."

AMENDMENT TO ARTICLE VI.

Add the word "Life" in line 2 of third paragraph, so that it may read "Life, Honorary and Corresponding members shall be exempt from all payments to the Association."

THE PRESIDENT.—The proposed amendment to the Constitution will lie upon the table until the next annual meeting.

DR. ENGLISH.—I would ask permission at this time to present a supplementary report of the Nominating Committee, as follows:

SUPPLEMENTARY REPORT OF THE NOMINATING COMMITTEE.

We your Committee regret that in typing our report the nomination of a gentleman for the all-important position of Secretary-Treasurer was omitted. We have great pleasure in presenting the name of Charles G. Wagner, M. D., of Binghamton, N. Y.

All of which is respectfully submitted.

W. M. ENGLISH, *Chairman of Committee.*

June 12, 1913.

Upon motion the supplementary report of the committee was accepted and the President was instructed to cast the ballot of the Association for the election of the Secretary and Treasurer named by the Nominating Committee.

THE PRESIDENT.—The ballot of the Association has been cast by me as instructed, and Dr. Wagner is re-elected Secretary and Treasurer of the Association for the coming year.

DR. PILGRIM.—Mr. President, ever since the reading of Dr. May's paper yesterday on statistical work there has been considerable discussion among the members as to the desirability of having a committee appointed to re-

arrange and make the statistical reports uniform for the different states. I, therefore, present that resolution and request that a committee on statistics be appointed.

Which motion was duly seconded and carried.

THE PRESIDENT.—I will appointed the following members on that committee:

Thomas W. Salmon, M. D., of New York; Owen Copp, M. D., of Pennsylvania; E. Stanley Abbot, M. D., of Massachusetts; James V. May, M. D., of New York; Henry A. Cotton, M. D., of New Jersey.

THE PRESIDENT.—I shall proceed in the regular order this morning, calling the names as they appear on the program. If there is time for any who have been omitted I will call on them later. The next in order is the report of the Committee on Diversional Occupation of the Insane, by Dr. Arthur P. Herring, of Baltimore, Md. (Chairman).

REPORT OF THE COMMITTEE ON THE DIVERSIONAL OCCUPATION OF THE INSANE.

Gentlemen.—The Committee on the Diversional Occupation of the Insane submits its report to the Association with the accompanying exhibits. The survey of the occupation and recreation of the insane in public institutions was done principally by correspondence with the superintendents of the various hospitals throughout the United States and Canada. The Committee desires at this time to express its appreciation to the many superintendents for their prompt and comprehensive replies to the questionnaire which was sent to them. Had it not been for the hearty co-operation of the members of this Association, the efforts of your Committee to obtain the data which is presented would have been in vain.

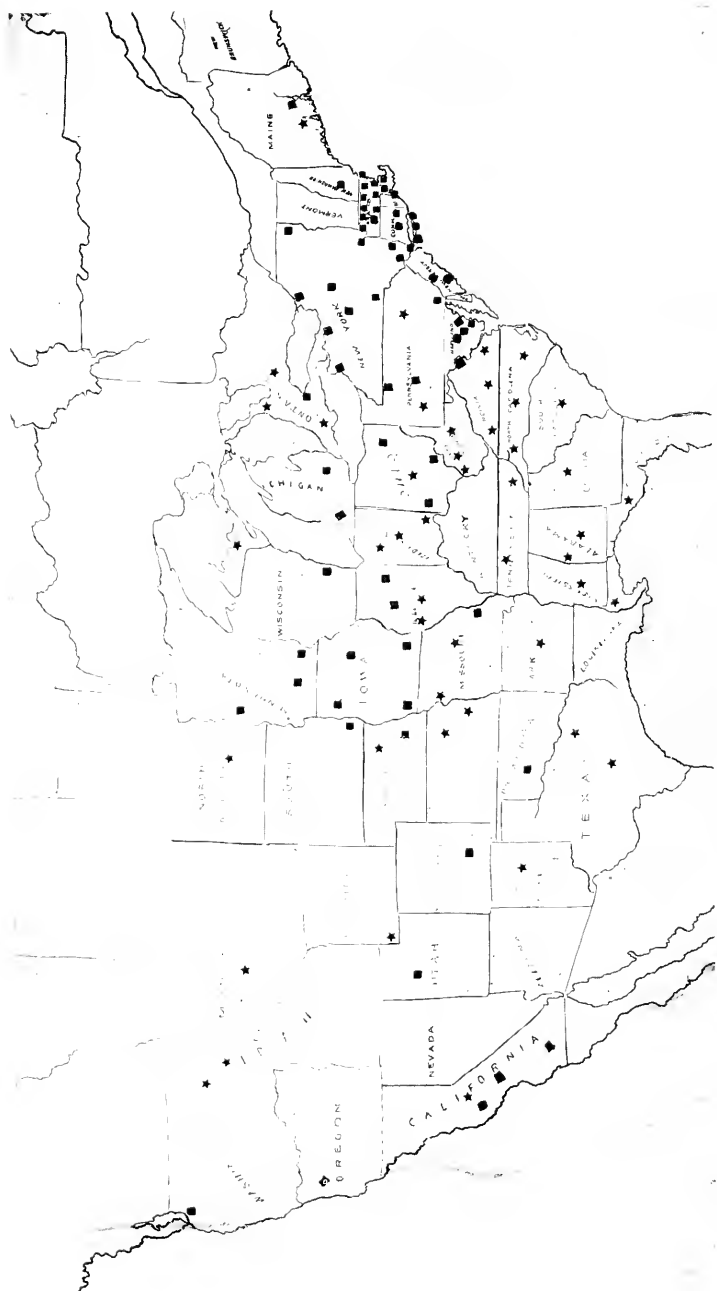
The following questionnaire was sent to 141 institutions; we received 111 replies.

QUESTIONNAIRE.

The Committee appointed at the last meeting of the American Medico-Psychological Association on the Diversional Occupation of the Insane respectfully request your kind co-operation in obtaining answers to the following questions, so that a comprehensive report may be made at the meeting to be held in June.

OCCUPATION.

1. What methods are used to employ the patients who are not willing to take part in the ordinary activities of your hospital?
2. Is there a doctor or a nurse whose special duty it is to study the large group of patients ordinarily inactive and prescribe as a therapeutic agent special forms of occupation?
3. Is there a special teacher whose entire time is devoted to the diversional occupation of patients?
4. Outline the special industries used in your hospital for these patients.



Outline map of the United States and Canada, showing the location of the various state hospitals for the insane where divisional occupation is or is not made a special feature in the treatment of the patients.

The hospitals represented by the "squares" are those in which divisional occupation is used as a special therapeutic agent. The hospitals represented by the "stars" are those in which no special means are used to occupy the so-called "unwilling" workers. In other words, the hospitals represented by the "squares" answered the questions sent out by the committee in the affirmative, while those represented by "stars" answered the questions in the negative.

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5. Is there a special industrial room set aside for this work or is there a ward or part of a ward in which these activities are carried on?

6. What is your opinion concerning the value of diversional occupation as a means for treating the unwilling workers, such as dementia præcox cases, acute cases that are not allowed the privilege of the grounds and the senile cases who are not physically able to perform routine work?

RECREATION.

1. What special forms of recreation are used other than the weekly dance or occasional motion picture shows or entertainments?

2. Is systematic exercise made a part of the daily hospital life under the direction of a special teacher as a means of treatment for a selected group of cases?

In reviewing the official list of institutions it was found that twenty public and one hundred private hospitals had been omitted, so that the report is incomplete in this respect. The replies to the questions have been especially interesting and tend to demonstrate conclusively that the diversional occupation of the insane as a definite therapeutic agent is generally accepted.

In classifying the institutions regarding this method of treatment two divisions were made: first, those who could answer all or a majority of the questions in the affirmative or who could state that some *special* effort was being made to induce the "unwilling" workers to take part in occupation and recreation. These are indicated on the map by the "squares." Second, the institutions in which only willing workers were employed in general hospital routine and no effort made to introduce special methods either for work or play are represented by the stars on the map. In the III replies received 60.3 per cent are in the "square" class and 40 per cent in the "star" class. It has located the various institutions on this outline map of the United States and Canada so that you may see at a glance the sections of the country where the most modern methods are employed in the treatment of the insane.

The States in the South and Southwestern sections are especially rich in "stars." If it has given any institution a "star" when it should have been a "square," or vice-versa, it will be glad to correct the error.

This survey has shown that in the States where the greatest advances have been made in the care and treatment of the insane, where the medical service has been modernized in every particular, there diversional occupation reaches the highest point of development. A modern, up-to-date State hospital is not complete without a thoroughly organized and systematized department for occupation and recreation. Extracts from a few of the replies received will illustrate, better than anything the Committee might say, the value of diversional occupation as a therapeutic agent in mental disorders. For example, Dr. Mabon of the Manhattan State Hospital writes:

"In the types of cases referred to, we think that much can be accomplished by systematic and painstaking instruction given to small classes. Among the chronic insane we feel that classes should be developed in every

ward except where patients are highly excited or actively suicidal. A great deal can be done with dementia præcox cases and other chronic types toward preventing the patients from settling into permanent conditions of apathy and idleness. Also much can be accomplished in the way of overcoming restlessness, mischievous behavior and various destructive tendencies. In acute cases, such as mild excitements, depression, both agitated and insufficiency types, very good therapeutic results are obtained if systematic instruction and individual attention can be given to the patient. Among senile cases a considerable number, we find, can be kept busy with the simpler forms of occupation."

Dr. Hutchings, of the St. Lawrence State Hospital, says: "I regard the work as of great value in improving the condition of dementia præcox patients of the hebephrenic type. It not only prevents deterioration of interest and loss of contact with the environment, but to a limited extent this can actually be restored. However, it is not curative, but a number of patients have been found so much improved, upon being visited by their relatives, that they have been removed to their homes. We have found that patients can overcome destructive habits and are hence less expensive to maintain; and a number heretofore idle have been trained to do work in the sewing rooms and laundry, where their services are of some value to the hospital. We have had very little success with senile patients and as a rule do not find them teachable."

Dr. George H. Kline, of Danvers State Hospital, remarks that "in the case of patients who show an unwillingness or disinclination to take part in the ordinary activities of the hospital efforts are directed to impress them with the feeling that occupation is a therapeutic measure. Upon this special emphasis is laid by the physicians. It has been our constant endeavor to create and foster a feeling that occupation is one of our most efficient remedial agents, and that under certain conditions it provides a reliable guide as to changes in the patient's mental condition. To this end nurses and attendants are taught and influenced to regard a patient's capability in occupation as a fairly accurate index of his state as respecting an advance towards improvement or the contrary."

Dr. Owen Copp, of the Pennsylvania Hospital for the Insane, expressed in his letter the attitude of the nurse to the patient, remarking that the "experience of the year has quickened the zeal of all in the occupation and diversion of patients as measures of treatment and re-education. The improvement wrought by the faithful nurses on demented wards has been remarkable in some cases. It has been inspiring to see these noisy, destructive, untidy, mischievous dements become gradually, under their training, quiet, clean, orderly, helpful, and even appreciative. Infinite patience and persistence are requisite, but the reward is great and satisfying. Drudgery is eliminated by prevention. The nurse is *elevated to the place of teacher from that of house-maid*.

"The enthusiasm of the nurse is indispensable, but something more is necessary. There must be organization sustained by trained officers whose primary duties pertain to these matters."

Dr. Harrington, of the State Hospital for the Insane, Howard, R. I., writes: "Of the greatest value. Recently we have felt that four patients were brought to a state of improvement which allowed them to leave the hospital, and that the chief, if not the sole, factor which brought about improvements was diversional occupation. These four cases seemed very unpromising at the start, and all were brought to greater activity by the exercise of faithful attention on the part of our instructor for months."

I might read a great many more similar opinions from hospitals using this method, but these must suffice.

The Committee believes that its survey has shown conclusively that diversional occupation is not only an approved method of treating the insane in over 60 per cent of the institutions throughout the country, but it should be and doubtless will be adopted by a great many institutions which have heretofore omitted it in their work. It has tried to ascertain from the questionnaire just what special efforts were being made to employ or to awaken into healthy activity by recreation the large and ever increasing number of "unwilling" workers. We all know that practically every institution employs from 40 to 60 per cent of the patients in routine work about the hospital and on the farm. An analysis of the replies received shows that about 40 per cent of the State hospitals make no effort to utilize the unwilling workers. Why is this? The principal reason appeared to be that the necessary funds were not available and the other reason that it was the policy of the hospital not to force or compel patients who were disinclined to activity to take any part in work or play against their will. The 40 per cent of "star" States are either not familiar with the principles of diversional occupation or have never given the subject much thought, because, in our opinion, there is no valid excuse for any institution, however lacking in funds, to neglect the method.

There is just one essential and absolutely necessary factor in establishing diversional occupation in any hospital and that is some one person, be he superintendent, assistant physician, or nurse, who is vitally and enthusiastically interested in the work and at the same time resourceful and capable. There will be a great many obstacles to overcome, but, with patience and determination, success is assured. The utilization of waste products about an institution forms one of the essential features of the work. Expensive equipment is not necessary, neither is it essential to have a special building or room set aside for the classes. Some of the very best results have been obtained on the wards. A special teacher is not absolutely necessary, but is, of course, a great help. When the work is once established, it has been the general experience of every one engaged in diversional occupation that it can soon be put upon a self-sustaining basis. The chief feature should always be the beneficial results to the patients and the hospital; the economic and financial questions are of secondary importance. This part, however, usually takes care of itself.

Diversional occupation is so closely associated with all hospital activities that it is a reliable gauge of the character of work done by the hospital. The application of occupation and recreation as a therapeutic agent means

the careful study of the patient. Again, it undoubtedly results in a larger per cent of recoveries and improvements, so that in co-operation with a proper After-Care Committee more patients can be returned to the community self-supporting, either in whole or in part. It means a better training for the nurses and attendants. There is injected into their daily work, which is usually monotonous, a spirit of interest and activity heretofore unknown. Diversional occupation properly carried out changes the atmosphere entirely of our State Hospitals from dull, daily routine to a live, wide-awake, energetic and ambitious hospital service. It should permeate every department from the superintendent to the interne and from the head nurse to the probationer. There are few institutions where the method has been developed thus far, but the outlook is encouraging and the Committee believes the American Medico-Psychological Association could be a strong factor in bringing this about.

The question of the recreation of patients is often a difficult one to solve by most hospital superintendents and is usually limited to the weekly or bi-weekly dance, an occasional picnic or motion picture show. Diversional occupation properly applied means systematic and carefully-thought-out recreation. Every State Hospital should have an athletic field for men and women, comprising base ball, soccer, hand ball, tennis, etc.; also provisions for indoor games during inclement weather. Individual gardens for certain patients have proven very successful at several institutions. It is the individual stimulus that is aroused in patients that marks the success of recreation. Patients witnessing games en masse derive very little benefit. It is much easier for the management, but of far less good to the patient.

The Committee summarizes its report with the following:

1. That diversional occupation of the insane is used and recognized by over 60 per cent of the institutions in this country as a most valuable means of treatment.
2. That occupation and recreation are of value in all forms of mental disorders, but are especially of value in the class of patients usually called the "unwilling workers."
3. That diversional occupation is a therapeutic agent to be prescribed after a careful study of each case and should be in charge of a competent director, either doctor or nurse.
4. That without diversional occupation the life of the patients falls into a dull and monotonous routine and many cases become hospitalized who otherwise might be restored to the community.
5. That diversional occupation systematically and scientifically applied marks the standing of a hospital, and that, if neglected or omitted, the patients are not receiving the most modern care and treatment to which they are entitled.

The Committee realizes that it has taken rather an advanced stand on this subject, but earnestly believes that those who are familiar with the movement will endorse its position.

The following institutions have taken part in the exhibit.

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MAINE.

Eastern Maine Insane Hospital, Bangor.
Maine Insane Hospital, Augusta.

NEW YORK.

Manhattan State Hospital, Ward's Island.
St. Lawrence State Hospital, Ogdensburg.
Rochester State Hospital, Rochester.
Long Island State Hospital, Brooklyn.

MASSACHUSETTS.

Gardner State Colony, Gardner.

MARYLAND.

Springfield State Hospital, Sykesville.
Maryland Hospital for the Insane, Catonsville.
Sheppard and Enoch Pratt Hospital, Towson.

NOTE.—The exhibits of the last two hospitals were delayed in transmission and did not arrive in time to be set up.

ONTARIO.

Homewood Sanitarium, Guelph.
Exhibit, National Committee for Mental Hygiene.

The Committee appends to this report a list of articles made in the various hospitals and of the various forms of recreation, with the hope that they may suggest new ideas to those interested in the work; also a bibliography of some of the more important papers relating to diversional occupation.

The Committee respectfully submits this report with the request that it be discharged, but with the hope that the work will be continued by a new Committee on Diversional Occupation, and that the exhibit, which has been so interesting, be continued.

Respectfully submitted.

ARTHUR P. HERRING, *Chairman*.

CHARLES T. LAMOURE,

W. W. RICHARDSON.

OCCUPATION

Fancy work and embroidery, lace making, crocheting, knitting, rug making, weaving, linen weaving, mattress making, brooms and brushes, basket making, furniture making and repairing, making straw hats, making bandages and cutting gauze, carpet making, cane seating chairs, cabinet making, hammock making, making door mats, millinery, making patch work quilts, making bed room slippers and bed socks, quilting, printing, block printing, book binding, cue tipping, individual gardening, burnt wood work, painting, water colors, etc., brass work, tooled leather, wood carving, raffia and reed, toys, stenciling, pottery, designing, bent iron work, saw work, sloyd work, clay modelling, wax modelling, drawing, mechan-

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ical drawing, decorating wood and paper, kindergarten work, scrap books, picture framing, making artificial flowers, colored bead work, bead weaving, making horse hair chains, polishing and shaping mussel and clam shells, schools.

RECREATION.

Walks, gymnastics, games, base ball, soccer ball, basket ball, medicine ball, hand ball, tossing foot ball, golf, field hockey, croquet, tennis, tether tennis, base ball for old men with large soft ball, lawn bowls, bowling, billiards, billiard tournaments, pool, quoits, horse shoes, marbles, cards, chess, checkers, dominoes, bean bag, fishing, bathing, skating, drills, class singing, band concerts, phonograph concerts, musicals and concerts, folk dancing, dances, masquerades, picnics, clam bakes, driving parties, motoring parties, trolley car rides, sleigh riding, steamboat excursions, boating, merry-go-round, shoot-the-chutes, county fair and circus, theatre parties, vaudeville performances, amateur theatricals, amateur "stunts," motion pictures, professional reader, teas given, religious services.

BIBLIOGRAPHY OF DIVERSIONAL OCCUPATION.

Marie: "Work in the Treatment of the Insane." *Rev. de Psych. et de Psychol. Exper.*, Jan., 1906.

Hamlin: "Schools for the Insane." *American Journal of Insanity*, July, 1901.

Moher: "Occupation in the Treatment of the Insane." *Journal A. M. A.*, May 18, 1907.

Cohn: "The Systematic Occupation and Entertainment of the Insane in Public Institutions." *Journal A. M. A.*, April 18, 1908.

Tomlinson: "The Influence of Occupation in the Prevention of Mental Reduction." *Minnesota Quarterly*, Nov., 1907.

Hall: "Work-Cure." *Journal A. M. A.*, Jan. 1, 1910 (also other articles).

Jacoby, G. W.: "A Colony Sanatorium for the Nervous and Neurasthenic: A Much Needed Work of Philanthropy." *New York Med. Journal*, Apr. 18, 1908.

Carolyn Booth: "Entertainment for Convalescents and Invalids." *Chicago Med. Recorder*, June 15, 1911.

Wm. Rush Dunton, Jr.: "A Nurse's Occupation Course." *Transactions of the American Medico-Psychological Association*, Vol. 19, 1912.

Wm. Rush Dunton, Jr.: "Occupation as a Therapeutic Measure." *Medical Record*, Vol. 83, No. 9, 1913.

Chas. T. LaMoure: "Re-education of Dementia Præcox Cases and Industrial Training of the Chronic Cases." *Transactions of the American Medico-Psychological Association*, Vol. 19, 1912.

Chas. T. LaMoure: "The Re-education of the Insane." *Maryland Psychiatric Quarterly*, Vol. 1, No. 2, 1911.

C. Floyd Haviland: "Occupation for the Insane." *Transactions of the American Medico-Psychological Association*, Vol. 19, 1912; also *American Journal of Insanity*, Vol. LXIX, No. 3.

J. D. Van Nuys: "The Value of Occupation in the Treatment of the Insane." Sixth Semi-annual Bulletin of the Kansas State Charitable Institutions, Feb., 1911.

"Some of the Problems Involved in Providing for the Personal Welfare of Insane Women." Minnesota Quarterly, Vol. IX, No. 2, Nov., 1909.

H. D. Purdum: "The Psycho-Therapeutic Value of Occupation." Maryland Psychiatric Quarterly, Vol. 1, No. 2, 1911.

J. Percy Wade: "Occupation of the Insane." Maryland Psychiatric Quarterly, Vol. 1, No. 1, July, 1911.

Grace E. Fields: "The Effect of Occupation Upon the Individual." American Journal of Insanity, Vol. LXVIII, No. 1, 1911.

Anne Burnet: "Re-education of the Insane." Bulletin of Iowa State Institutions, Vol. XI, No. 1, 1909.

Chester L. Carlisle: "A Graded and Systematized Plan of Out-Door Exercise for the Demented Insane." American Journal of Insanity, Vol. LIX, No. 3, 1903.

Mary Lawson Neff: "Occupation as a Therapeutic Agent in Insanity." Medical Record, Vol. 78, No. 23, Dec. 3, 1910.

"Occupation for Convalescents." Editorial Medical Record, Vol. 83, No. 17, Apr. 26, 1913.

"Occupational Treatment of Insanity." Editorial Medical Record, Vol. 80, No. 9, Aug. 26, 1911.

THE PRESIDENT.—The report of this Committee is open for discussion.

DR. BRIGGS.—I have listened to this interesting and instructive report and I would like to emphasize two points. One is the therapeutic value of the occupation of patients. To be of real therapeutic value occupation must always be a diversion. Too many of our patients we are apt to put into occupations which are familiar to them, in which they were employed before they came to the hospital; the shoemaker is often put in the shoe-shop, the harnessmaker in the harness-shop, etc. Now, I think we should interest these patients in new occupations which will not remind them of their home surroundings and occupations which might have contributed to their illness. I think the occupation work at all the hospitals should be organized; there should be some interchange of ideas by some general superintendent of occupations going from hospital to hospital, and also visiting the hospitals outside of the state and bringing back new patterns, new methods and new ideas. I remember once visiting a certain institution and seeing there an imbecile, who before he was admitted was destructive and most difficult to deal with and his people did not know what to do with him. Now those in charge of him have gotten this patient into the habit of whittling or shaving when he becomes excited and when he becomes much excited he will begin this and work until he will finally sit down tired and perfectly contented. I think the habits of the demented and imbeciles can be changed so that the excited and untidy will do things which are harmless and perhaps useful.

DR. BRUSH.—I think there is nothing more practical in the treatment of many cases of insanity, especially the demented cases. I think the suggestion of Dr. Briggs, in regard to the exchange of ideas of occupation from one institution to another, is a most excellent one, and I have put that very idea into practice quite recently. Dr. Wade, of the Spring Grove Hospital, has a patient who for some months was very much disturbed and I understand he is now one of the most expert basket-makers there. For awhile this man worked by himself until one day he was asked to take under his charge a new admission who needed the benefit of occupation of some sort, and then he took other patients under his charge, until now he is the superintendent of the basket department at Spring Grove Hospital, and this is one of the most active departments in the hospital. At the Mental Hygiene exhibit at Baltimore this man showed what work he was doing and how he had taught others, and Dr. Wade has recently loaned him to me and he is coming over to the Sheppard to teach us some of the tricks of the trade that we want to learn. The idea is simply to give these patients something to do. I remember once being at an institution in Europe and walking about I noticed a man pulling up flowers, and I said, "Why, your patient is pulling up the flowers." My friend said, "I don't care as long as he is doing something; all I am interested in is to get him to do something; by-and-by he will learn to discriminate between the weeds and the flowers, in the meantime he is doing something." He was simply putting an entering wedge into his case by allowing him to pull up the flowers, and by-and-by he will be doing something useful. I think that is a very important idea to keep in mind in this occupational treatment.

I had hoped to show during this meeting a box and a book-case as two contrasts in the educational-diversional occupations. I had a certain patient who was a nuisance in many ways. He would not talk, but grunted like a pig. I said to my men in charge of this man, get him to doing something and perhaps he will stop grunting. He made a crude bench out of some old boxes, and, seeing that he could make something, became interested in making something else; then he made a table, he then made a still better table; then he made a table which would be an ornament to any house and which would sell for \$20 in any furniture store; he finally made a book-case, ornamented it, put on the hardware, etc., and produced an article of furniture which is as good as any cabinet-maker can make to-day. That man stopped grunting, began reading newspapers and became interested in life since he has found that he can do something. I believe that occupation should be both diversional and educational as well.

DR. WILLIAM A. WHITE.—In the hospitals sometimes the scientific features are forgotten. I have listened to this excellent report, and nobody can question the amount of labor which the committee has expended on it, and yet they have not said anything about the scientific aspect of the diversional occupations. It is time that something should be done along those lines. Lots of our patients get well, and we do not know anything about how or why they get well; they sometimes get well when they are employed and

sometimes they do not, and in the whole literature of psychiatry I do not know of but one article of distinguished merit that has appeared lately, and that was by Bertschinger,* which gives any idea of what the process of getting well with patients is. One cannot use occupation intelligently unless he knows his patient and knows what the relation is between the occupation and the healing process. When a patient is given occupation in a hospital he may be put into an occupation that will help him and he may not. There are thousands of just such questions as Dr. B. has raised, and I merely want to rise to this particular point: that in all of these hospitals that are doing this diversional occupation there are very few who are investigating the mechanisms of recoveries, and until we know what the mechanisms of recovery are we cannot apply any therapeutic agency to bring about recovery, except by a hit-and-miss method.

THE PRESIDENT.—Gentlemen, we have about seven papers on the program for this morning. The first paper is by Dr. North.

Charles H. North, M. D., of Dannemora, N. Y., then read a paper entitled "A Proposed Change in the Criminal Law." Discussed by Drs. MacDonald, White, Moody and North in closing.

DR. MACDONALD (presiding).—The next paper on the program is by Dr. Edward E. Mayer, of Pittsburgh, Pa.

Dr. Mayer then read a paper entitled "Dementia Præcox: Some Criticisms and Observations." Discussed by Dr. White.

DR. MACDONALD.—The Secretary informs me that Dr. Coriat being unable to be present, has requested that his paper be read by title, and it is so ordered.

DR. WAGNER (presiding).—With the permission of the Association the order will be slightly changed now in order to enable Dr. Walter E. Fernald, of Waverley, Mass., to read his paper. Dr. Fernald was obliged to go to Michigan to a meeting and has only just arrived here. Some days ago he requested permission to read his paper a little later than provided for in the program.

Dr. Fernald then read his paper entitled "The Diagnosis of Mental Defect." Discussed by Drs. Briggs and Salmon.

THE PRESIDENT.—There are three papers on the program for this morning, the authors of which are not present, so this will close the morning session. This afternoon we will go on our excursion as guests of the Mayor. This meeting is now adjourned until 8.30 this evening.

* Bertschinger: Heilungsvorgänge bei Schizophrenen. Allg. Zeits. Psychiat., Bd. 68, H. 2.

EVENING SESSION.

The Association was called to order by the President.

The following papers were read:

"The Clinical and Anatomical Analysis of Cases of Insanity Arising in the Fifth Decade," by E. E. Southard, M. D., of Boston, Mass., and Earl D. Bond, M. D., of Hathorne, Mass., read by Dr Bond.

"The Distribution of the Lesions of General Paralysis," by Samuel T. Orton, M. D., of Worcester, Mass.

"Amyloid Degeneration of the Brain in Two cases of General Paresis," by S. C. Fuller, M. D., Westborough, Mass.

"The Occurrence of Miliary Plaques in Senile Brains," by William J. Tiffany, M. D., of Binghamton, N. Y.

THE PRESIDENT.—The next paper on the program is by John H. W. Rheim, M. D., of Philadelphia, Pa., entitled "Psychoses Following Cerebral Apoplexies." Dr. Rhein has had to leave the city and has asked that his paper be read by title. This closes the evening program.

There will be a Council meeting immediately at the close of this session.

Adjournment.

FRIDAY, JUNE 13, 1913, 10 A. M.

THE PRESIDENT.—The Association will please come to order. The first thing on the program is the report of the Committee on the Status of Medical and Scientific Work in the Hospitals of the Several States and Provinces, Adolf Meyer, M. D., of Baltimore, Md. (chairman).

DR. WAGNER.—I have a copy of a report by Dr. Meyer which has been received by me without instructions.

DR. H. M. HURD.—I saw Dr. Meyer in Baltimore, and he told me that he had succeeded in finding a copy of the report which was given at the Denver meeting and which had been lost, and this is the copy referred to by the Secretary. I move that this report be read by title, and that it be published in the Transactions.

THE PRESIDENT.—If there is no objection the report will take that course. I will now ask the Secretary to read the report of the Council.

REPORT OF THE COUNCIL JUNE 12, 1913.

The Council has received the application for active membership of R. D. Bruce Smith, M. D., Toronto, Ont. According to the constitution final action will be deferred until next year.

The Council makes the following recommendations: That the report of the Committee on Applied Eugenics be printed in pamphlet form, and that it be distributed to the members of the Association, and also among the medical and legal professions; that copies be sent to the various libraries in the country and to such other places as the Secretary in his judgment deems best.

That the incoming President be authorized to appoint a Program Committee for the next annual meeting, and also a Committee of Arrangements.

That the dues for the ensuing year be fixed at the usual rates, viz.: Five dollars for active members, and two dollars for associate members.

That the annual meeting of the Association for 1914 be held in Baltimore, Md., and that the date be left discretionary with the President and Secretary, to be determined later.

The Council also recommends that some particular psychosis be selected on which the Program Committee shall be requested to arrange a symposium so that at least one session of the next annual meeting may be devoted to this psychosis.

Respectfully submitted,
CHARLES G. WAGNER, *Secretary*.

THE PRESIDENT.—The next in order is the election of members proposed yesterday. The Secretary will read the names.

The Secretary then read the following names:

For associate membership: Amos T. Baker, M. D., Riverdale, N. Y.; E. H. Cohoon, M. D., Howard, R. I.; Marcus A. Curry, M. D., Greystone Park, N. J.; Charles R. Lowe, M. D., Hospital, Ill.

For transfer from associate to active membership: Jessie M. Peterson, M. D., Norristown, Pa.

The Secretary was instructed to cast the ballot of the Association for the election of the members as proposed.

THE PRESIDENT.—The ballot has been cast and the members are duly elected and transferred as recommended by the Council.

DR. MACDONALD.—I would like, as the incoming President, to express my gratification and pleasure at the decision of the Council to meet in Baltimore next year instead of in New York. As is known to members of the Council, it was suggested that if satisfactory to others, it was desirable to meet in New York the coming year, and finding after that action had been taken that there was some feeling on the part of some of the members of the Association, I felt it incumbent upon me as the incoming President to ask the Council to change the place of meeting to Baltimore; I am glad this was done, and I want to assure the Association that the New York delegation will be there next year in full force and will do everything in their power to make the meeting a success.

DR. BRUSH.—I want to express my appreciation of Dr. MacDonald's action in this matter. I want to say that when I came here first I said that we wanted the meeting in Maryland, but I felt that the President-elect, Dr. MacDonald, ought to have first choice; now he has very graciously given way to our Baltimore members, and I want to express for my fellow-members in Baltimore our appreciation.

DR. PRIDDY.—I move that the report of the Council be adopted.

Which motion was duly seconded and carried.

On motion of Dr. Woodson, it was voted that hereafter the report of the Council on time and place of the next meeting shall be received on Thursday morning instead of Friday.

THE PRESIDENT.—We will now proceed with the reading of papers. The first one on the program is by Dr. Alfred Gordon, of Philadelphia, Pa.

Dr. Gordon then read a paper entitled "A study of Hallucinosis."

THE PRESIDENT.—We will now have a paper entitled "Association Test as an Aid in Diagnoses," by Wm. Rush Dunton, M.D., of Towson, Md. Is Dr. Dunton present?

DR. BRUSH.—Dr. Dunton is not present, but I have his paper here, and I move the paper be read by title.

Carried.

DR. ABBOT.—If I remember correctly there has been no action taken on the report of the Committee on Diversional Occupation of the Insane, by Dr. Herring. In that report there was a recommendation that the committee be discharged and a new committee appointed, or that the committee be continued. I move, therefore, that Dr. Herring's report be accepted, and that the committee be continued for the ensuing year.

Motion duly seconded and carried.

THE PRESIDENT.—We will now have the last paper on the program, by Dr. Helene Kuhlmann, of Buffalo, N. Y., on "Some Cases Illustrating the Psycho-Genetic Origin of Certain Psychoses."

Dr. Kuhlmann then read a paper as above.

THE PRESIDENT.—I will now call for the report of the Committee on Resolutions.

DR. HILL.—On behalf of the Committee on Resolutions I beg to submit the following:

Resolved, That before closing this Sixty-ninth Meeting of the American Medico-Psychological Association we tender our thanks to the Committee

on Program for providing us with a card that for scientific and practical interest has rarely been excelled in the history; to the retiring President for his masterly address, as well as the courteous and efficient administration of his office; to the members who have presented papers of such marked ability and scientific interest; to the Committee of Arrangements for the excellent provision for our comfort and convenience; to Hon. Charles C. Cole, Mayor of Niagara Falls, for his hearty welcome and enjoyable entertainment; and to the Clifton Hotel for its excellent care and hospitality during the week we have spent as its guests.

Respectfully submitted,
CHARLES G. HILL,
T. J. W. BURGESS,
G. H. MOODY,
Committee.

DR. WOODSON.—I would suggest that the Resolutions Committee has overlooked the fact that the street car company extended us a courtesy.

DR. HILL.—It was the impression of the Committee that this courtesy was extended to us from the Mayor.

On motion, duly seconded and carried, the report of the Committee on Resolutions was accepted and adopted.

THE PRESIDENT.—The next thing on the program is introducing the President-elect. Now it would be a piece of supererogation on my part to introduce Dr. MacDonald to this Association. As prominent as he has been in our specialty in America he needs no introduction; nor shall I attempt to induct him into office; the Association has already done that. As gracefully as I can I shall simply vacate the chair to him.

I have known Dr. MacDonald for a number of years. No man has been more prominent in our specialty in the State of New York. He has held more prominent positions in psychiatry than any man in that State; he has served as expert witness most frequently for the State, in more criminal and other cases; he has held the superintendency of several of the hospitals for the insane in New York, and was instrumental in organizing them under the Lunacy Commission, serving at the beginning and for a number of years on those boards. His work in this particular has been copied over the whole country.

An incident and a coincidence have occurred since I have been in the chair, which I believe I will mention.

As an incident, a day or two ago, Dr. Priddy, of Virginia, quietly handed me this gavel, sent by some friends, with the thought attached that I would probably be the last Confederate veteran able to hold the position. It was made from the sycamore tree that stood at the door of the tent where General Lee made his farewell address to his soldiers at Appomattox. Pardon me if I value it as a war relic.

The coincidence is, that I am about to surrender my position to a veteran of the Northern Army. Dr. MacDonald served, I find, in the cavalry in most of the important battles in Virginia and was at Appomattox. I was in the same service, under General Wheeler in South Carolina, at the surrender. We were allowed to retain our side arms, and I wish to carry home this gavel as a side arm.

But, in this position and at this time, I prefer to look at this gavel from a much more pleasant and successful standpoint. I wish to take it home as a trophy won in the warfare of science. I value it most highly as a memento of the episode in my life when I held the highest position to be gained in our specialty in medicine. Without any anticipation or solicitation on my part, you raised me to this proud position. I thankfully appreciate the honor. At the same time, I more gratefully recognize the compliment extended to my part of the country by an association that reaches in its membership to the confines of a whole continent, and is as scientifically broad in its scope and services.

Before I go to the floor I would like to thank our worthy Secretary, Dr. Wagner, for his assistance. Without him and his stenographer at my elbow I would have held an awkward position on the rostrum. The fact is, Dr. Wagner is pretty nearly "the whole thing." He is the pivot about which the machinery of the Association revolves. Long live Dr. Wagner!

Now, Mr. President, I vacate the chair to you with the best of good wishes. With you as President, and this growing and spirited Association behind you, I bespeak a most successful administration. (Applause.)

DR. MACDONALD.—*Members of the Association:* While my election to the Presidency, pursuant to a time-honored usage of this Association which annually promotes its Vice-President to the higher office, was not unexpected, yet I find myself at a loss, now that the mantle of my esteemed and worthy predecessor has actually fallen upon my shoulders, to adequately express my appreciation of the great honor you have conferred upon me by selecting me to preside over your deliberations for the ensuing year. While it has fallen to my lot during the nearly forty-five years that I have been privileged to write "M. D." after my name to receive not a few honors from several of the Governors of the State of New York, from the Courts, as well as from the legal and medical professions and from my army comrades, I desire to say that I regard the honor you have conferred upon me to-day as the greatest one I have ever received. Indeed, I consider it both a great honor and a great privilege to preside over an organization which is second to none in the field of psychiatry and allied subjects; an organization whose membership, past and present, includes many of the most eminent and distinguished men in our chosen field of activity. When I recall the long list of my distinguished predecessors in this office, covering a period of nearly forty years of my membership, among whom may be mentioned Isaac Ray, Thomas R. Kirkbride, Pliny Earle, Charles H. Nichols, R. M. Bucke, Andrew McFarland, John H. Callender, Orpheus Everts, W. W. Godding, John P. Gray, Theophilus O. Powell, Eugene

Grissom, H. P. Stearns, Daniel Clark, J. B. Andrews, A. E. Macdonald and others who have passed away, and having in mind the achievements of these men, as well as those of our living ex-Presidents, I realize how small a part my incumbency of the office must play in the annals and traditions of the Association; and while I enter upon the duties and responsibilities of the office with a feeling of trepidation engendered by a realizing sense of my limitations as a presiding officer, I feel that I may count upon your indulgence, your patience and forbearance in respect to my shortcomings, and that you will not

"View me with a critic's eye;
But pass my imperfections by."

Moreover, I beg to assure the Association that I shall use my best endeavors to further its interests during my term of office, knowing that I can confidently rely upon our efficient and worthy Secretary to guide me safely through the mazes and intricacies of any parliamentary tangles that I may encounter, and to support me in my efforts to emulate the example and maintain the high standard of efficiency established by our retiring President, who has endeared himself to us all by his gracious manner, his quiet dignity, his uniform courtesy and scholarly attainments.

It becomes my duty to appoint a Committee of Arrangements, in pursuance of which I would name the following:

Dr. J. Percy Wade, Catonsville, Md.; Dr. Charles G. Hill, Baltimore, Md.; Dr. Edward N. Brush, Towson, Md.; Dr. Arthur P. Herring, Baltimore, Md.; Dr. Joseph Clement Clark, Sykesville, Md.

The Committee on Program will be appointed later on.

As there is no further business before the Association, I declare this meeting adjourned to meet in Baltimore in 1914, on a date to be fixed subsequently, of which due announcement will be made by the Secretary.

CHARLES G. WAGNER, *Secretary*.

PRESIDENTIAL ADDRESS.

HAVE WE A SPECIALTY?

By J. T. SEARCY, M. D., TUSCALOOSA, ALA.

Members of The Medico-Psychological Association, Ladies and Gentlemen: The brain of man far transcends in importance every other organ in his body. It is built up into two hemispheres on afferent and efferent nerve lines, coming from and going to the opposite sides of his body. Composed of innumerable cells and fibers, with a growing complexity almost past unraveling, it is crowded into convolutions within its unyielding bony case.

Man's specialty is his brain. It so far excels in capacity the brains of all other species, that, with its use, he has encompassed the whole world and claims it all for himself. In improving his environments, he has eliminated every serious competitor, until his only rivals are his fellow men.

The associated contact with each other of increasing numbers of men, throughout the ages, has accumulated in his environment a vast deal of knowledge to be acquired by the person, and complex rules of conduct to be observed. Increased brain ability and improved brain habits have been the gradually acquired results in advanced races.

A typical nerve-cell has afferent and efferent nerve fibers and is itself the center in its arc of living action. A typical "nerve-center" is an aggregate of nerve cells, and is provided with afferent and efferent nerve lines, that, also, in a living way, bring recipient action to it and carry executive action from it. Within the sphere, of which it is the center and to the limits of which its fibers extend, it adjusts its executive acts to those it has received. Indeed, the whole nervous system is composed of receptive and executive fibers with adjusting centers.

The convoluted cerebrum is the psychic-center in the nervous-system. It is built on the same general principles as other nerve-centers, only immensely more complex in structure and in function.

There are two departments in the nervous-system; one is the "cerebro-spinal" or psychic department, of which the brain is the center, whose functions relate to the outside of the man; the other is the "sympathetic" or subpsychic department, the functions of whose centers relate to organs within. All the functions of the psychic department of man, relating to his environment, adjust him, for his welfare, to the agencies around him and attempt to adjust them to him. Its functions work outside of him in these two directions.

Sentiency is a faculty belonging to all living things. It is the characteristic which distinguishes them as living. With it, they appreciate things and agencies in their environments and adjust themselves to them. It rises in grade and in complexity throughout all biology and reaches its highest exhibition in man. All living structures of his body are more or less sentient, but the nervous system is most specialized in that way. In the "cerebro-spinal" or psychic department, the sentiency of its grand center reaches the grade of "consciousness." The sentiency of the centers of the "sympathetic" or subpsychic department is subconscious.

The large and complex psychic-center relates to the environment with a correspondingly large complex system of afferent and efferent nerve fibers. It has afferent "tactile" fibers from the general surface of the body—which relate to the environment; and from each of the sense-organs, of tasting, smelling, hearing, seeing, the afferent fibers are specialized to bring specific action or information into the posterior receiving tracts—relating to the environment; those of seeing and hearing are the most valuable because they extend furthest outside. It has also a large number of afferent fibers bringing a "subjective" sense of comfort or discomfort from all parts of the body. On the other side of the psychic center or department, there is a system of efferent, centrifugal, motor fibers, that carry executive mandates to the voluntary muscles; all of which relate to the environment. Almost exclusively the functions of the psychic center relate to the outside of the man; and, for his welfare, it learns, reasons and executes within his environment. Between its receptive tracts and its executive tracts there is a whole sphere of most complex convolutions engaged in adjusting ideation and reason. It has the ability to perform again previous acts in re-collecting them. Knowledge consists in the number of previous acts

the center can perform again or recollect. The adjusting or reasoning faculties become complex in proportion to the amount and character of knowledge. All these complexities of structure and of function have been built up, hereditarily, through a long line of succeeding generations; the last generation, by its acquired superiority, continuing itself alive to-day.

Repeated neuron effort and psychic exercise alone maintain the general efficiency of this most accomplished organ and it takes unusual repeated effort of a profitable kind to increase or to improve its efficiency—always perfected in the way practice is made.

The faculty of variability or adjustability, to suit the vicissitudes in the changing environments indicates in itself an instability of results in psychic-centers of persons; and produces in different individuals, and in different lines-of-descent, the normal differences we witness in psychic habits and psychic abilities.

All the functions of this organ, relating to the outside, render its exhibitions of psychic methods-of-action and capacities-for-action open to outside observation. An expert has to tell us the condition of an internal organ, but everybody claims to be a judge of the psychic abilities and habits of others—because they are open to outside observation.

In the associated contact of men with each other, because in rivalries of society it has become a necessity, all men study and judge each other in these particulars. Because there are differences and peculiarities, we look for them. There is a constant exchange of opinions, on this subject, about others. The "reputation" one bears comes from this common custom.

When the psychic differences among men are usual, customary, expected, they are what we are looking for, and noting as natural and normal; when, however, the differences are unusual, unexpected, not customary, we at once regard them as unnatural and abnormal. Normal differences among men are matters of interest; abnormal differences are matters of concern and anxiety—often the safety and welfare of the person is involved or the safety and welfare of others.

Psychic abnormalities are of two kinds, in general terms: one indicating deficiency of function, like in idiots, imbeciles or feeble-minded, so from childhood, and in demented, who, once normal, have now lost psychic ability; the other kind indicating defectiveness.

like in the maniacs, the melancholiacs, the phobiacs, the paranoiacs, the hysterical, also, in the excessively immoral, irascible, untruthful, erotic, selfish, etc. The latter kinds compose the "unstable" members of society.

Some of the recent terms relating to the psychic-center, are (1) Psychology, which means the study of its normal structures and functions; (2) Psychopathy, which means the study of its abnormal structures and functions; (3) Psychiatry, which relates to the care and treatment of its psychopathic conditions. Psychiatrists have of late introduced the term (4) "psychosis," which means any grade of any kind of psychic abnormality; leaving the term (5) "insanity" to apply to those grades sufficiently grave to bring the person within the jurisdiction of a court. (6) Neurasthenia means a general weakness of the whole nervous system, in both the internal and external departments; (7) psychasthenia means a weakness of the psychic department—of the center relating to the outside, with its afferent and efferent lines included; (8) cerebras-thenia means a weakness of the center itself. Neurasthenia, psychasthenia and cerebras-thenia are predisposing causes of all psychoses—asthenia means weakness and weakness of structure pre-disposes to accident, injury, disease, faultiness, defect, and general disability of function.

A court takes cognizance of a psychosis to determine its grade, for a number of purposes. For instance: to determine whether his psychosis is sufficiently grave to absolve a person from the penalty of the law, if he have committed a crime; or sufficiently grave to commit one to a hospital for restraint, care and treatment; or to provide charitably, or with a guardian, for a person if he is not capable of caring for himself; or to invalidate one's will, contract or transfer of property; or to prevent one's marrying, voting, or testifying. To determine the grade of the psychosis is always the question before the court. Our patients have all been sent to us by a process of law—not of medicine—except sometimes in an advisory way. It is always a matter of opinion and the opinion of the court prevails.

I have generalized on the nervous-system and have emphasized the comparative size and importance of the psychic-center of man to draw more decided attention to the scope and importance of our work and obligations.

Have we specialty in medicine?—is a question often implied if not directly asked. We have practically been rated as having none, by other professions, by the rest of the medical profession, and, indeed, by ourselves. We have been looked upon simply as keepers of beneficiary institutions provided by the state, without any special line of physiology or pathology to concern us. A review, however, of the programs of our late meetings will show, that we are entering the field of scientific psychology and psychopathy, with reference to the psychic center, as our special field of study and investigation. We are assuming our position.

In the range of scientific psychology and psychopathy the whole field of sociology is open to us. Sociology may be said to be the study of all those means and measures that render men and women "more fit" in society, or that prevent their becoming "unfit." Fitness implies intelligence and morality. Fitness takes in the study of the qualifications of the psychic-center in all the range of human mentality. Sociology, as a study, includes the factors that lead to human psychic improvement as well as to decadence.

We are doing a vast deal of late to improve the environment, in which we and our children shall live, by improving the psychic qualifications of our fellowmen. This is the most important feature in the environment.

More than ever we are looking after the general health of the people, and the brain, being an important part of the body, is always benefitted by general health. In education, by way of improving psychic faculties, we are increasing the amount and the methods of mental practice—in performing thought and in acquiring habits of thought. The amount of essential knowledge, also, in the environment, to be acquired by the scholar, is immense, and it is added to every day. We not only have more schooling provided and more schooling enforced, but there is schooling provided for all. Efforts of many kinds are made to increase the inherent psychic abilities of people and to increase the knowledge they acquire—that is, to improve their intelligence. In another line of practice, to improve the moral and ethical habits, there is more public opinion and more moral sentiment, more commendation and denunciation, more law and government, with more religious teaching.

A vast deal of effort is being expended to improve the psychic qualifications of men of civilized countries, and it is more and more

a fact, that psychic qualifications are more a necessity in order to live and to excel in society. Cortical convolutions are multiplying. Intelligence and morality are increasing.

In our specialty of psychopathy and psychiatry, however, we are being "cross fired" with urgent demands and inquiries, asking for reasons, why the insane are increasing faster than the population, and, not only that extreme grade, but why all milder grades of psychic defectiveness are also increasing.

It is very positively asserted that there are more backward children in the homes; that there are more rude, fretful, peevish and nervous children. In the schools, that there are more dullards, not able to keep up with their classes, and more ill mannered boys and more wayward girls. The juvenile courts have increasing numbers brought to them; and industrial schools and reformatories have had to be added to the correctional lists. Among the adults, there are more morons, more paupers, more tramps, more alms-house cases; the criminal courts are more occupied; men are violating laws against person and against property in greater numbers; and more women are going into prostitution. "Vice commissions" abound, with startling reports. All the charitable and correctional organizations are diligently occupied in their work. "Social workers" are in the field everywhere. Penal institutions are calling for more room, and the states are put to, in properly handling the isolation, restraint and employment of the convicts. The hospitals for the insane have been supplemented with separate institutions for the care of the idiots, the imbeciles and the feeble-minded, with reformatories for inebriates, with epileptic colonies, with homes for the dullards, dotards and demented; still, the hospitals for the insane are demanding more room.

These efforts, along with others in civilized countries, are being used to stay the tide of human decadence. Whether inclined to take the field or not, we are every day called upon to state the causes of increasing psychic deficiency and defectiveness.

The "worry" of civilization is often cited as a cause; but, in the stress of civilization it is more a symptom than a cause; worry, itself, is most often an indication of psychic defectiveness and inability.

The idle classes of society are notably the deteriorating ones. Excellence comes only, in the individual and in his lineage, after

psychic effort, and deterioration follows idleness. The deteriorating idle rich and the already deteriorated poor furnish most material of this kind. This is a general proposition affecting all humanity.

By way of suggestion, I cite the following two potent factors, prevailing most in civilized countries and most of late years, as causes for psychic deterioration.

We have in medicine a list of much used drugs, which have their specific effects by their chemic action upon the recipient, afferent, sensating, conscious nerve cells and fibers of the psychic department. The most frequently used of these drugs are, chloroform, ether, nitrous oxide, chloral, some coal-tar products, cocaine, the solutions and the alkaloids of opium, alcohol, nicotine and caffeine.

Any one of these agents in solution in the blood, making the circuit of all the structures of the body, finds, in the most delicate protoplasm of the sentient, sensitive, conscious structures, more easy, ready material for its chemic action than in less delicate structures. Because they are sensitive, sentient and conscious, as their property, their protoplasm is the most delicate in the body. Any one of these agents in the circulation obtunds this property or faculty of these structures, so that they cannot so well, or, if pushed far enough, cannot at all carry or receive sensation.

Successful anæsthesia in surgery consists in suspending, in this way with the ether, the conscious psychic-center, and not administering enough to suspend the subpsychic centers of the internal department, which control the heart, lungs, etc.; if that is done, the man dies.

Enough of any one of these agents, even the less toxic, can be given to suspend the functions, not only of the psychic department, but also of the subpsychic, and kill a person. It is singular how small a dose of any one of these agents, in solution in the blood, is sufficient to chemically affect these most delicate structures.

To dull nerve sentiency, with any one of these drugs, is always a pleasurable "feeling"; to relieve discomfort is always a thing to be sought; they are always used in medicine for this purpose, namely, to render the person's sentient structures so they cannot convey discomfort or feel it. They make even the normal person "feel better." He likes the effect. The anodynes, of which cocaine is typical, seem to affect first and most the afferent sensory nerve lines; and the anæsthetics, of which chloroform is typical, to effect

first and most the conscious cortex. They all chemically differ, and affect one or another part more. Enough given, however, they affect all nerve structures, in both psychic and subpsychic departments.

The repeated use of any one of these drugs has the after-effect of rendering these sentient structures more sensitive than before. It impairs them in the very direction in which its chemic action has been exerted. They are damaged in their sentiency.

Feeling or sensation being the function or faculty of the recipient structures, they are impaired by repeated use of these drugs in the way of being made more sensitive than before, more ready to be pained or discomforted, so that a sense of general discomfort follows their use—when the drug is withdrawn.

The mildest of these drugs, caffeine, nicotine and alcohol, have gotten entirely out of scientific hands and are generally used, and most used in civilized countries—as luxuries. Women and children generally, almost universally, take as a luxury, caffeine from colanuts, tea or coffee; men everywhere use caffeine, nicotine and alcohol. Sometimes the more toxic, cocaine, morphine, or chloral, etc., are taken.

A condition called “drug habit” is always indicated, when the person feels general discomfort after the withdrawal of any one of these drugs, which he knows he can relieve by taking more. And the amount of his discomfort measures the amount of damage done. He drags an increasing sense of discomfort of this kind, which requires increasing doses to relieve. The psychasthenic hyperæsthesia, occasioned in this way, is a very frequent and a generally prevalent malady in civilized society. Drug “diatheses” from parents to children are inherited in this way, until society is full of oversensitive people in increasing numbers, who take readily to the use of these drugs. They are born oversensitive “nervous” and “tired.” The increasing consumption of these drugs in civilized countries has reached enormous proportions, and the demand is growing, for these reasons.

Psychasthenia, occasioned by drugs, is the foundation condition of many more serious conditions of the psychic-center. The repeated use of these drugs often invades the highest faculties of the cortex, so that, if there is any predisposition to irascibility, pugnacity, quick-temper, ill nature, nervousness, worry, mendacity,

immorality, silliness, dulness, simplicity, and the like, or to the graver psychoses, hysteria, paranoia, melancholia, mania, or dementia, by the use of these drugs they are made more apparent in the external exhibitions of these persons. In this way they not only lead to all milder grades of psychoses, but also to the graver forms called "insanity." The so general use as luxuries of the less toxic of these drugs in civilized society, more than in the uncivilized, and often the use of the stronger ones, are having their general effect in increasing psychic deficiencies and defects. That, as we take it, may be one answer to the general run of inquiries.

In my opinion, there is another generally increasing and prevailing factor that leads to psychic decadence in civilized countries.

The high-grade psychic abilities of civilized peoples, compared with others, enable them, not only to provide better within their own borders, but to exploit the whole world for the necessities of life and for luxuries. In every way they are more abundantly supplied; and also, they devise and enforce much better government and altruistic rules, besides educational advantages.

The psychic center is as much a matter of heredity as any other organ; possibly more so, inasmuch as it carries more recent variations than other organs, owing to its changing adjustability, in meeting the complexities of the environment.

With our domestic animals, we lay great stress upon the selection of the individuals to carry into the next generation their improved qualities. Nothing is done, however, in this way to improve man's specialty, which is amenable to the same general rules of "stirpiculture." In human society, improving psychic qualifications along lines-of-descent is left, without any intelligent direction, to the "survival of the fittest" principle. The sex appetite, almost altogether, leads to the mating of the sexes, without any reference to posterity.

If the psychically less competent multiplied in civilized society at the same rate, or even at a less rate, than the more competent, the improved environment, better to live in, would allow more of them than before, to reach adult life and to multiply. An equal valuation, also, placed on all human lives alike, which is a recent principle of civilization, allows more of the less competent to multiply. Besides that, not only do we allow equal advantages to all to survive in accordance with their several abilities, but we go further, by the

extension of our charity and sentiment, and devote a great deal of our social work to the continuance and multiplication of those, who, in the ruder and cruder stages of our history, dropped out because of inefficiency. The methods of civilization, as they go nowadays, are very helpful to the multiplication of the less capable. I believe psychic deficiencies and defects are increased in this way. As sociologists, we should interest ourselves in discouraging the increase of the less capable, as well as encouraging the multiplication of the more capable. Eugenics of this kind is the coming theme of sociologic study. Much popular instruction is needed. The attempted practical application of eugenics, relating to heredity, however, awakens some of the most difficult problems.

Much more could be said along the lines of human improvement and human decadence. I have time but to touch the high points in the field, to give a few headlines on the subject.

I hope, however, I have sufficiently emphasized the importance of our specialty in medicine, so as to awaken greater direct interest in the psychic-center, and to show that our work embraces the largest and the most important specialty. Brain heredity, brain hygiene, with brain practice, training and instruction, can all be embraced within the limits of our specialty. We cannot properly understand psychology, psychopathy and psychiatry without studying them from these standpoints.

STATISTICAL STUDIES OF THE INSANE.

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Comparatively few administrative bodies charged solely and exclusively with the supervision and management of institutions for the insane are to be found in this country. In twenty-six states the insane are under the jurisdiction of boards which also have charge of the charitable institutions, and in some instances of the prisons and reformatories as well. Fifteen states have no central administrative control over the insane whatever, namely, Alabama, Arkansas, Delaware, Florida, Georgia, Idaho, Maine, Mississippi, Nevada, New Mexico, North Dakota, Oregon, South Carolina, Tennessee and Texas. In Massachusetts the feeble-minded, epileptics, inebriates and drug habitues are under the supervision of the State Board of Insanity. In New Hampshire the State Board of Health is held responsible, in addition to its other duties, for the care of the insane. In Utah the feeble-minded and epileptics are under the supervision of the Board of Insanity. In Vermont the idiots and feeble-minded come under the jurisdiction of the State Board of Supervisors of the Insane. In Maryland the State Lunacy Commission, in Illinois a board of administration, and in New York the State Hospital Commission are charged with the duty of caring for the insane.

As a result of the various forms of supervisions in the different parts of the country, there are almost as many methods of administration. There is a corresponding lack of uniformity in policy from a medical point of view. In no way can this be better illustrated than by the annual reports of the various institutions and the accompanying statistical tables. These reports usually show the changes in population, with the number of admissions, readmissions, transfers, discharges, deaths, etc. The statistical tables used by the New York State Hospital Commission until

recently have included the following, which may be considered as fairly representative of those usually published:

1. General statistics of the state hospitals, showing the admissions, discharges, deaths, transfers, etc.
2. The same for the private licensed institutions.
3. The same for the institutions for the criminal insane.
4. Number of patients in institutions for the insane in the state, annual increase and ratio of patients to population.
5. Number of admissions to institutions for the insane in the state, exclusive of transfers, and rate per million of population.
6. First admissions and readmissions for the year.
7. Recovery rates and death rates for the year.
8. Nativity of first admissions and of parents of first admissions for the year.
9. Ages of first admissions classified according to nativity.
10. Comparison of ages of first admissions of different nationalities.
11. Length of time in United States before commitment of foreign-born first admissions, classified according to nativity.
12. Degree of literacy of first admissions classified according to nativity.
13. Psychoses of first admissions classified according to nativity.
14. Environment of first admissions to state hospitals classified according to nativity, as city, village or rural.
15. Family history of first admissions classified according to psychosis.
16. Use of alcohol by first admissions.
17. Psychoses of first admissions to each institution.
18. Nativity of readmissions and of parents of readmissions.
19. Ages of readmissions classified according to nativity.
20. Literacy of readmissions classified by nativity.
21. Psychoses of readmissions classified by nativity.
22. Environment, city, village or rural, of readmissions classified by nativity.
23. Deaths classified by psychoses.
24. Average age at death and average time in hospital of deaths during year.
25. Ages of patients dying in the several institutions.

26. Causes of death classified by psychoses.
27. Discharges classified by psychoses.
28. Residence by counties of first admissions for year.

While it is conceded that such tables should be printed for various reasons in the annual reports, they still leave much to be desired. An inspection of the statistics as published by state boards or commissions will show that they contain much food for thought from an administrative and financial point of view, but very little that is of value as far as advancing our knowledge of psychiatry is concerned. Full information is to be found regarding the age, sex, race, color, civil condition, environment, birthplace, residence and education of the patient, but comparatively little light is to be obtained as to the exact nature of the psychoses represented. When any effort is made in this direction, the results are usually characterized by striking irregularity of methods of classification in the various localities. Some still follow classifications in vogue twenty or thirty years ago; others have adopted various modifications of Kraepelin's ideas, while the great majority give no information whatever regarding the various forms of insanity. It was not until the twenty-first annual report published for the year ending September 30, 1909, that a modern, comprehensive classification was used by the Commission in Lunacy of the State of New York.

The recovery rate has been estimated as based on the number admitted for the year, the average daily population, the whole number treated, the number discharged and the rate per thousand or ten thousand of the admissions, etc. All of these methods are, to say the least, unreliable, if not absolutely misleading. The total number of recoveries includes those occurring in the whole population under treatment representing the accumulation of years in the form of various psychoses from which no recovery can possibly be expected, such as epileptics, seniles, imbeciles and the terminal stages of various other conditions. The recoveries from this total population have little if any real relation to the number admitted during the year. It would be highly desirable if, from a given thousand or ten thousand consecutive admissions, accurate and definite reports could be obtained showing how many are discharged improved or recovered, how many die, and what percentage become permanent residents of our chronic wards.

Only such statistics can accurately determine the real recovery rate or give us any definite idea as to the ultimate disposition of the cases admitted. In spite of the great wealth of material for study in our institutions, we have comparatively little information as to the definite percentage of the different psychoses represented in admissions or discharges. The 1911-1912 report of the New York State hospitals shows for the first time the various subdivisions of the different psychoses included in the first admissions.

The number admitted per year, as compared with each one hundred thousand of the general population of the state, is of some value in determining the insanity rate. The death rate is of comparatively little significance unless it shows the percentage of a definite number of admissions that die, rather than the deaths occurring in the total hospital population, including cases admitted during a period of twenty or thirty years. The causes of death which have some definite relation to the various psychoses represented should be shown. The nativity, environment, residence, degree of education, etc., are of little consequence unless there is some relation to the various forms of insanity in question, all of which must be considered separately. Studies of heredity are of comparatively little value, except as based on the individual psychoses instead of representing the insane population in general. The revival of interest in this subject has resulted in scientific methods, based on the Mendelian theories, which indicate the importance of collecting much more accurate statistics regarding the transmission of mental diseases than have been obtained before. Much valuable information can be obtained by making studies of the ultimate fate of the discharged patients, with particular reference to the special forms of the psychoses. It is only in this way that we can tell definitely how many cases of dementia præcox, for instance, make permanent recoveries; how many are sufficiently improved to resume their home life, although not entirely recovered; the length of time during which they are able to remain outside; how many subsequently return, etc. Such studies can only be made by competent field workers or after-care agents, and will throw a light on the ultimate outcome of these cases which can be obtained in no other way. Special statistical studies must be based on careful and accurate

methods of examination and on the elaborate case records which are now available in our institutions. Much can be accomplished if such investigations are undertaken by the administrative bodies having state supervision of the insane. With the great wealth of material available for study in our large hospitals we should have accurate statistical information as to the relation between the use of alcohol and the various forms of alcoholic insanities. Why do some alcoholics have Korsakoff's disease, while others have paranoid or hallucinatory conditions, and still others show a simple form of mental deterioration? We should have accurate information regarding the forms of alcohol used and the periods of its use.

The records of the various hospitals would be of great value in determining the lapse of time occurring between the appearance of the initial lesion of syphilis and the subsequent development of tabes, general paresis or cerebral syphilis. The accurate duration of these diseases should be determined. In these parasymphilitic disorders it would be interesting to know whether mercurial or other forms of treatment were instituted on the appearance of the initial lesion, and if so, for what length of time active treatment was continued. Accurate information should be obtained as to the etiological factors involved in the development of the different forms of dementia præcox and the relative frequency of duration of attacks of excitement and depression in cases of manic-depressive insanity, etc.

There is as yet much to be learned regarding the drug and other toxic psychoses. Valuable statistical information could be collected on the subject of the so-called symptomatic depressions. The recent works of Freud and others on the subject of hysteria and the influences of sexual traumas should be made the basis of a general statistical study along these lines. The views now held regarding paranoia and the paranoid conditions strongly indicate tabulations which will give us some accurate knowledge of these psychoses, regarding which our views have materially changed during the last few years. The constitutional disorders and inferiorities lend themselves particularly to statistical studies of various forms. The existence of eccentricities and peculiarities as well as actual intellectual defects, constituting evidences of constitutional conditions which have a very material bearing on

the etiology of dementia præcox, paranoic and other psychoses, is entitled to very careful consideration.

A study of the statistical reports of the New York State Hospital Commission for the year ending September 30, 1912, shows that a beginning has been made in collecting statistical information which will be of greater value than that which has heretofore been at our disposal.

The number of insane in the New York state hospitals in 1912, as compared with the general population of the state, was 1 to 282, a ratio which has not changed to any material extent for some years. There is a slight difference as regards the sexes, the ratio of males being 1 to 293 and that of females 1 to 273. In 1910 the ratio for women was 1 to 269. The preponderance of females in the hospital population is due to several important factors, the principal one of which perhaps is the greater longevity of women. It is to be remembered, furthermore, that the alcoholic psychoses, which usually recover, and the cases of general paresis, which always terminate fatally, are very largely included in the male population.

It is interesting to note that only 8.3 per cent of the insane in the New York institutions are reimbursing patients. The great majority of them are supported entirely at the expense of the state.

There were 297 voluntary cases received during the year, of which 168 were first admissions and 129 were readmissions. The laws of New York provide that voluntary cases may be accepted when the mental condition of the patient is such as to enable him to recognize the necessity for treatment and make an application therefor. The large proportion of readmissions included in this number demonstrates the truth of the argument that there are many who realize fully the necessity for hospital care. Of the 297 voluntary patients 53 were subsequently committed during the year.

The average number on parole in the various hospitals during the course of the year was 905. It is customary when a patient has recovered to a sufficient extent to warrant his leaving the institution to grant him a parole for a period of time which must not exceed six months, to make sure that his improvement has

reached such a stage that he can properly adjust himself to the former surroundings.

It is worthy of note that the criminal insane at the close of the year constituted approximately 4 per cent of the population of the state hospitals.

The 22 private institutions for the insane admitted 459 patients during the year; 95 were discharged recovered, 55 much improved, and 112 improved during the same length of time. In other words, 16 per cent of the total number under treatment were discharged as benefited and 5.8 per cent as completely recovered.

The insane population of the state numbered 14,405 in 1890 and 31,624 in 1912. The increase from 1890 to 1900 was 47.7 per cent, while that of the general population of the state during the same period was 21.2 per cent. The increase from 1900 to 1910 was 37.8 per cent, while that of the general population of the state during the same period was 25.4 per cent. During the past two years the population of the state has grown more rapidly than has the hospital census.

Of the 4046 discharges during the year ending September 30, 1912, 1610 were reported as recovered, 557 as much improved, 1072 as improved, 690 as unimproved, 117 as not insane. Based on the first admissions, the percentage of recoveries was 28.04. Attention has already been called to the fallacy of this method of estimating recoveries. Based on the total number under treatment during the year, the percentage of recoveries was 4.12. This, however, includes a large number of chronic and incurable cases which have been accumulating in the hospitals for years and which interfere seriously with determining the actual percentage of cases in which a recovery can be hoped for and which should be based only on the final disposition of the first admissions. Including those improved and much improved, the number discharged during the year as having been materially benefited by treatment amounts to 3239. The recoveries per 100 admissions were 21.9 for the year.

An analysis of these cases is of interest.

Of the alcoholic cases, 359 were discharged recovered, 125 as improved or much improved, and 26 as unimproved during the year, a total of 510 discharges, as compared with a total of 684 admissions during the same time.

Two senile cases were discharged recovered, 15 much improved, and 33 improved during the year; 626 senile cases were admitted.

Thirty-nine cases of drug psychoses were admitted during the year; 29 were discharged recovered and 6 as improved.

One hundred and thirty-three diagnosed as infective exhaustive conditions were admitted during the year; 56 cases were discharged as recovered and 11 as improved or much improved.

One hundred and fifty cases of involution melancholia were admitted during the year; 50 cases were discharged as recovered, 32 as improved and 13 unimproved.

Twelve hundred and twenty-six cases of dementia præcox were admitted during the year; 10 cases were discharged as recovered; 103 as much improved; 284 as improved and 255 as unimproved.

Two hundred and forty-seven cases of paranoic conditions were admitted during the year; 11 were discharged recovered, 16 much improved, 68 as improved and 50 as unimproved.

Eleven hundred and sixty-seven cases of manic-depressive insanity were admitted during the year. As compared with this, 627 cases were discharged recovered, a percentage of 53.9; 91 cases as much improved, 41 as improved and 53 as unimproved.

Ninety-six cases of psychoneuroses were admitted; 42 cases were discharged as recovered, 20 much improved and 17 improved, 11 unimproved.

It must be remembered that the number discharged bears little definite relation to the number of the same psychoses admitted and they are cited together merely for purposes of comparison.

Of the 7283 admitted during the year, 78.8 per cent were first admissions and 21.2 per cent readmissions. Of the first admissions 3008, 52.39 per cent, were of native birth and 2699, or 47 per cent, were of foreign birth, less than 1 per cent being unascertained; 1270, or 22.12 per cent, were of native parentage; 4214, or 73.39 per cent were of foreign or mixed, and 4 per cent of unknown parentage. Of the 2699 patients of foreign birth, 23.1 per cent were born in Ireland, 15.3 per cent in Germany 13.6 in Russia, 9.8 per cent in Italy, 8.4 per cent in Austria, 5.6 per cent in England, 4.4 per cent in Hungary, 3.7 per cent in Canada, 2.1 per cent in Poland, other countries were represented by less than 2 per cent in each case. The rate of insanity of the native popula-

tion was 47 per one hundred thousand in 1912 and the foreign population 97 per hundred thousand. The rate of admissions per 100,000 of population as shown by the census of 1910 was 108 for Austro-Hungary, 101 for England and Wales, 169 for Ireland, 81 for Canada, 56 for Italy, 104 for Scandinavian countries, 116 for Scotland, 85 for France, 94 for Germany, 76 for Russia and Poland.

Of the 7283 patients admitted during the year, 54.3 per cent were citizens by birth, 15.9 per cent were naturalized and 16.2 per cent were aliens, 13.6 per cent being unascertained. Of the total number of patients of foreign birth admitted during the year over 17 per cent had resided in this country less than five years, 12.5 per cent from six to nine years, and 42.6 per cent for twenty years or more.

Of the first admissions during the year, less than 1 per cent were under 15 years of age, 5.5 per cent were from 15 to 19, 10.8 per cent from 20 to 24, 22.7 per cent from 25 to 34, 21.9 per cent from 35 to 44, 15.6 per cent from 45 to 54, 10.4 per cent from 55 to 64, and 12.4 per cent 65 years of age or over.

Of the 5742 first admissions in the various hospitals during the year, 596, or 10.4 per cent, were senile cases; 719, or 12.5 per cent, general paresis; 294, or 5.1 per cent brain tumor and various nervous diseases; 567, or 9.9 per cent, alcoholic psychoses; 23, or .4 per cent, drug and other toxic psychoses; 125 or 2.2 per cent, infective exhaustive or auto-toxic conditions; 14, or .2 per cent, symptomatic depressions; 18, or .3 per cent, depressive hallucinoses; 119, or 2 per cent, involution melancholia; 185, or 3.2 per cent, depressions undifferentiated; 919, or 16 per cent, dementia præcox; 190, or 3.3 per cent, paranoic conditions; 658, or 11.5 per cent, manic-depressive psychosis; 179, or 3.1 per cent, epileptic insanity; 74, or 1.2 per cent, psychoneuroses; 186, or 3.2 per cent, constitutional inferiorities; 70, or 1.2 per cent, imbecility with insanity; 262, or 4.6 per cent, were unclassified; 86, or 1.5 per cent, were not insane.

Of the 596 cases of senile psychoses, 297, or 49.8 per cent were diagnosed as simple senile deterioration; 64, or 10.7 per cent, paranoid forms; 57, or 9.6 per cent, delirious and confused states; 28, or 4.7 per cent, depressed and agitated states; and 11, or 1.8 per cent, were of the presbyophrenic type.

Of the 719 cases of general paresis, 450, or 62.5 per cent, were of the cerebral, and 127, or 17.7 per cent, of the tabetic type. There were 45 cases of cerebral syphilis, constituting .8 per cent of the total first admissions, and 166 cases of cerebral arteriosclerosis, a percentage of 2.9.

Of the 567 alcoholic cases, 43, or 7.6 per cent, were of alcoholic deterioration; 108, or 19 per cent, Korsakoff's disease; 199, or 35 per cent, acute hallucinoses; 12, or 2.1 per cent, chronic hallucinatory conditions; and 74, or 13 per cent, paranoid states. There were four cases of psychoses resulting from illuminating gas poisoning.

Of the 125 cases of infective exhaustive insanity, 23, or 18.4 per cent, were cases of infective delirium; 7 of the exhaustive type of psychosis, and 17, or 13.6 per cent, of delirium, with heart disease.

Of the autotoxic disorders there were two cases of thyrogenous insanity and 22 of uremic and diabetic disorders.

Of the 929 cases of dementia præcox, 441, or 47.5 per cent, were of the paranoid form; 65, or 7 per cent, of the catatonic, and 167, or 17.9 per cent, of the hebephrenic; 75, or 8 per cent, were of the simple form; 210 cases, or 3.7 per cent of the total first admissions, were classified as allied to dementia præcox.

Of the 658 cases of manic-depressive insanity, 324, or 49 per cent were of the manic type; 168, or 25.5 per cent, of the depressive; 36, or 5.5 per cent, of the circular form, and 70, or 10.6 per cent, of mixed conditions; 196 cases, or 3.4 per cent of the total first admissions, were diagnosed as allied to manic-depressive insanity.

Of the 74 cases included under the heading of psychoneuroses, 26 were of the hysterical, 16 of the psychasthenic, and 27 of the neurasthenic type.

Of the 186 cases of constitutional conditions, 20, or 10.7 per cent, were psychopathic states, and 92, or 49 per cent, were of constitutional inferiorities.

There were 512 deaths during the year in the cases diagnosed as senile psychoses. Of these, 11 were due to pulmonary tuberculosis, 14 to carcinomata, 17 to apoplexy, 125 to cardiac diseases, 108 to arterial diseases, 78 to broncho-pneumonia, 41 to lobar pneumonia, 17 to enteritis, 17 to nephritis.

Six hundred and eleven cases of general paresis died during the year. Of these, 9 were due to pulmonary tuberculosis, 9 to cardiac conditions, 2 to arterial disease, 35 to broncho-pneumonia, 23 to lobar pneumonia, 3 to nephritis, and 491 were ascribed merely to general paralysis of the insane.

Four hundred and sixty-three cases of dementia præcox died during the year; 144, or 31 per cent, were due to tuberculosis; 13 to apoplexy, and 16 to exhaustion, 73 to cardiac conditions, 23 to diseases of the arteries, 26 to broncho-pneumonia, 39 to pneumonia, 21 to nephritis.

Ninety-three cases of involution melancholia died during the year. Death was due in 19 cases, or 20 per cent, to pulmonary tuberculosis; in 16 to cardiac conditions, in 4 to arterial diseases, in 15 to pneumonia, in 8 to enteritis, and in 10 to nephritis.

One hundred and twenty-four cases of epilepsy terminated fatally during the year; 11 were due to tuberculosis, and 26 to pneumonia.

One hundred and sixty-three cases of manic-depressive insanity died during the year. Thirty of these deaths were due to pulmonary tuberculosis, 28 to exhaustion, 32 to cardiac conditions, 9 to arterial diseases, and 22 to pneumonia.

Of the first admissions, 596 were senile cases. Of these 298 came from first class cities having a population of over 175,000, 40 from second class cities with a population of 50,000 to 75,000, 24 from third class cities with a population of 20,000 to 50,000, one from third class cities under 10,000, and 186 from villages and rural districts.

Of the 719 cases of general paresis admitted during the year, 531, or 73.9 per cent, were from the first class cities, 35 from second class cities, 23 from third class cities of 20,000 to 50,000, 28 from third class cities under 20,000, and 86 from villages and rural districts.

Of the 567 cases of alcoholic psychoses admitted during the year, 372, or 65.6 per cent, were from first class cities, 35 from second class cities, 30 from third class cities of 20,000 to 50,000, one from third class cities under 10,000, and 83 from villages and rural districts.

Of 119 cases of involution melancholia, 49, or 41 per cent, were from first class cities, 6 from second class cities, 17 from third

class cities of 20,000 to 50,000, 7 from third class cities of 10,000 to 20,000, one from third class cities under 10,000, and 38, or 32 per cent, from villages and rural communities.

Of the 919 cases of dementia præcox, 655, or 71 per cent, were from first class cities, 63 from second class cities, 31 from third class cities of 20,000 to 50,000, 35 from third class cities of 10,000 to 20,000, 2 from third class cities under 10,000, and 113 from villages and rural districts.

Of the 658 cases of manic-depressive insanity, 443, or 67 per cent, were from first class cities, 45 were from second class cities, 26 from third class cities, 18 from third class cities of 10,000 to 20,000, 2 from third class cities under 10,000, and 113, or 18 per cent, from villages and rural communities.

Of the 4260 cases where definite information could be obtained, 1099 showed a definite history of insanity in the family, 647 a history of nervous diseases, alcoholism, etc., and 2514 no evidence of such heredity. In other words, 41 per cent of ascertainable cases had an unfavorable family history.

Of the cases of dementia præcox, there was a history of insanity in 48.2 per cent; of involution melancholia, in 55.2 per cent; of psychoneuroses, in 51.6 per cent; of senile psychoses, in 38 per cent; of general paresis, in 28 per cent; of paranoic conditions, in 45 per cent; and of imbecility, in 75 per cent.

The excessive use of alcohol appears in 25.32 per cent of the ascertainable cases in 1912. It is given as an etiological factor in 869, or 15.1 per cent, of the admissions.

An effort was made during the year to ascertain the constitutional makeup of the individuals represented by the various psychoses. These were reported as normal, inferior or defective. The term "inferior" was applied to persons who, while not actually defective, have not kept abreast of their opportunities, who, with educational opportunities, have not acquired an education, or who have not prospered by reason of poor judgment, lack of self-control and initiative. These investigations show that of the alcoholic cases, 10.7 per cent were inferior; of the dementia præcox group, 31.3 per cent; allied to dementia præcox, 27.4 per cent; manic-depressive, 12.8 per cent; epileptic psychoses, 31.1 per cent; other constitutional inferiorities, 84.6 per cent.

Of 627 cases of manic-depressive insanity, 235 entered hos-

pitals within 15 days after the onset of the psychoses, 54 from 15 to 30 days, 100 from 30 days to two months. Three and three-tenths per cent recovered within one month, 38.8 per cent after one to three month's residence, 15.6 per cent 4 to 6 month's residence, 12.6 per cent 6 to 7 months, 8.6 per cent 8 to 9 months, 7 per cent 10 to 13 months, 4.5 per cent 14 to 17 months, 4.8 per cent 18 to 24 months, 4.8 per cent were in the hospital more than 24 months; 57.7 per cent of the whole number of cases recovered after a hospital residence of less than 6 months.

A further excursion into the subject of the statistical aspects of insanity would, I think, prove not only unprofitable, but wearisome. It will, however, be conceded that valuable information can be obtained in the institutions under our charge if proper statistical studies are instituted. In conclusion, I would strongly urge upon the American Medical-Psychological Association, as the only national organization interested exclusively in the study of insanity, the advisability of undertaking the preparation of a uniform method of statistical study for adoption by the various administrative boards connected with the different states and provinces.

THE GENETIC CONCEPT IN PSYCHIATRY.

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I will begin by telling you briefly the story of a case communicated to me by Dr. Gregory. The patient was a young girl who lived in the country not far from New York City. Financial straits of the family made it incumbent upon her to leave her home in the country and betake herself to New York to earn a livelihood. Upon the eve of her departure her parents, solicitous for her safety, warned her against the lures of the great city. They told her to be careful and not to be deceived by suave strangers who might approach her, and by no means ever to permit herself to yield to an invitation to take any alcohol, and they told her about knock-out drops; if she needed information to ask an official, a policeman—never a stranger. This was the time, too, when the papers were filled with accounts of the exposures in the white slave traffic, and she had read of this.

Shortly after her arrival in New York she was able to secure a position at a salary of \$15 per week, got a boarding place, and everything went well. After a while, however, her employer came to her and told her that matters had not been going well with him in a business way and that therefore he would be forced to reduce her salary to \$8 per week. This necessitated a readjustment on her part, and the first effort she made was to see if she could not get another position that would pay her as well. This, however, she was unable to do and finally had to realize that she must go on at the reduced compensation. This required that she should cut down expenses and live cheaper. To that end she secured a room in a cheaper German boarding house on the East Side.

Hardly had she settled in her new quarters than one evening at dinner she was begged to have a glass of beer; the boarders being German, beer was commonly served at the table. She refused and resisted, but finally yielded and drank a little beer.

While sitting at the table she overheard two of the men opposite talking, and one said to the other, "I think it can be done for \$50." This alarmed her considerably, and after leaving the table she went into her room and shut the door and went to bed. She heard constantly, however, footsteps about the house, and she felt convinced that something wrong was going on; that evil designs were in the minds of some of the boarders, and that they were preparing to invade her in her room. About this time, too, the little beer that she had drank disagreed with her, made her stomach feel bad, and she was afraid that it had been doped. She became more and more frightened, and finally arose, put on her things, hastily left the house and sought a physician. He made some examination of her and looked at her tongue, and then, according to her story, said that he thought she had been poisoned. This was the last stroke. She rushed from the physician's office, shrieking into the street, and was shortly taken up by a policeman and sent to the Bellevue Pavilion. Here she was in a wild state of excitement, absolutely inaccessible for two or three days, and then finding that her environment was a friendly one, that they were trying to do things for her and not to injure her, she gradually calmed down, and at the end of approximately three days she quite recovered from the episode, had full insight, and could leave the hospital.

We are dealing here quite evidently with an hysterical episode of very acute onset and rapid subsidence, but how are we to explain, to understand, the symptoms? I have cited the case because it would seem that here we have quite a simple illustration of the general concept that I wish to give you in this paper.

In order to understand the mechanisms here involved we must realize first that this girl had had certain warnings from her parents on starting for New York. These warnings had been received, understood at the time, and then practically at least, laid aside and forgotten after she arrived in the city and adjusted herself to the new conditions, secured employment and settled down in the new relations. Now a difficulty arises; she has to make a complete readjustment which involves a considerable sacrifice of her comfort, and this is a difficult thing to do. In her attempt to deal efficiently with reality she is not successful altogether. Now the interesting thing about her lack of success in

dealing with the problem of her new adjustment shows itself by a psychosis that is easily seen to be nothing more than a realization, a coming to life, as it were, of all the possibilities suggested by her parents warnings. How can we understand this reanimation and reactivating of things which have gone before and been left behind?

In order to explain this psychosis it is necessary to enter the realm of hypothesis. It will be seen that the psychosis can be understood if we first postulate some form of psycho-physical energy which has the capacity under certain circumstances of flowing back, as it were, and re-animating old experiences. This is the theory of the introversion of the libido, or if the term libido is not liked, of the psycho-physical energy, or whatever name you wish to give. An elaboration of the theory is to the effect that the individual is constructive, creative, mentally healthy, so long as this energy is flowing outward in interest upon the external world of reality; that when it flows backward within the individual himself, then disorder of mind is the result. The occasion for a flowing backward of the energy or an introversion, as it is called, is some difficulty met with in effectively dealing with reality; a difficulty arises and adjustment is impossible; the flow of the energy outward is impeded; it is dammed up, and it flows backward. In this way old channels are reanimated as in the case I have cited.

The application of the theory of a psycho-physical energy, the dealing with the mind in terms of energy, enable us to understand the case cited I think very clearly. The following out of this theory, however, has certain wider applications, which are the particular ones to which I desire to call your attention.

In the first place, if we bear in mind that man is what he is at any particular moment only because of all that has gone before; that his mental life is one of constant growth and development, one of constant accretion, of adding to from below upward, then we can understand that a regressive libido, a libido flowing backwards, will reanimate successively lower levels and bring into the foreground mental qualities that are more and more childlike in proportion to the depth of the introversion. My paper is essentially a theoretical one, and for that reason and also because of temporal limitations I cannot enter into elaborate illustrations

to show this. However, you are all familiar with the childlike qualities that are exhibited in many of the psychoses. The hysteric, for example, almost invariably impresses you as childish, the playfulness of the manic case is proverbially childish and many of the traits of the *præcox* are also. We see here, therefore, the importance of child psychology to an understanding of the psychoses; the importance of the genetic principle as applied to the interpretation of the childlike characteristics that we see so frequently in mental disorder.

Still a further implication follows: If man at any particular time is an end product of all that has gone before, all that has gone before implies very much more than his own individual life. If it has been possible for you and me to-day to attain a certain height of intellectual development it is only because we have been able to stand upon the shoulders of the generations that have preceded us. The development of the mind, like the development of the body, has had its history through the ages, and the mind like the body carries along within it evidences of its history. We could not possibly understand the appendix or the *ligamentum nuchæ*, or a thousand other specific things in the anatomy of the human body, if we were not acquainted with comparative anatomy and knew their individual histories. And so there are things in the human mind that are inexplicable unless we know their histories.

Whereas the general statement that the mind has had a history just as the body has may be accepted, it is another thing and a more difficult thing, to understand how there may be vestiges of that history preserved in the mind showing the sources of present-day structures. We think of the mind as something intangible, of something incapable of being formed and preserved from generation to generation. The comparison I have given I trust will help to make this possibility clearer. However, I feel that it is not yet clear, and I would say in addition that I do not mean by any manner of means that ideas, definite concepts, actual memories, if you will, are handed on from generation to generation; that I do not mean, but I do mean that such a structure of mind may exist in a given individual or under given conditions of disease that corresponds to the structure at a lower cultural level in the history of the race, and that when this correspondence

occurs then, with certain variations of content, we get the same general results in the way in which the individual thinks and feels and comes into contact with the world of reality and of experiences.

The introverted libido, therefore, will not only reanimate progressively lower levels in the history of the individual, but it can also reanimate progressively lower levels in the history of the race. So that a given mental disease may reduce the individual first to a condition resembling his childhood and then to a condition of mind resembling a lower cultural level in the history of the race. This is the theory upon which we are attempting to explain certain so-called archaic modes of reaction which are found so frequently in cases of dementia præcox, although they may be found not only in other conditions, but in people who are practically free from mental disease, but in which these types of reaction crop out in phantasy formation, more especially in dreams.

A simple illustration at this point may serve to make what I mean somewhat more clear. An old gentleman dreamt that he was two logs of wood, separated in different places and that he could not get together. The meaning of the dream, was quite clear. He felt himself split into two opposite tendencies. He had always desired in his life to go one way, but circumstances had forced him another, and so there was a continuous conflict throughout his life between what he desired on the one hand and what he was forced to do on the other. The principal question is, Why should this man represent himself in his dream as wood. His associations to wood were three: namely, fire, food, and ashes. If we will go back to the history of primitive man and realize the tremendous importance that wood had for him, particularly as being the carrier and container, in accordance with his way of thinking, of fire which was of such vast importance and so difficult to create, we begin to see that our dreamer is giving an importance to wood that is commensurate with the importance which primitive man gives it and in somewhat the same way; because, does not the wood contain fire, and is not fire life? We have plenty of examples of the use of fire as meaning life. We speak of the flame of life, the heat of passion, and have many other similar expressions, and so wood contains the fire or the life just as the mother contains the child and the flame and the fire comes

forth from the wood and the child comes forth from the mother. Primitive man also believed that the food that was cooked over the fire absorbed the qualities of the fire, and so if the fire was a god then the food absorbed the divine qualities. And finally ashes mean death. The dreamer was very much afraid of death. He realized that he never could attain to union with himself in this life, and so ashes would signify the only way in which he could obtain this union, namely, in death. The ashes are the residue of the wood after burning and so the woman is looked upon not only as the source of life, but the source of death. She not only creates a new life, but passes her own life on into the new, and therefore dies in giving birth.

All of these symbolisms group about the symbolism of wood as representing the individual. You will see now what I mean: wood, fire, food, ashes, were all naturally within the experience of the individual, but he uses this material—he uses these experiences, in an archaic way; he gives them turns of meaning that correspond to the meanings given by primitive man; he looks upon them from the standpoint of a lower cultural level. The split in his life had come very early; it had gone very deep; it involved his most profound thinking and feeling, and so it went way back to those early types of reaction which I have designated as archaic.

In the few minutes at my disposal I have only been able to give you a mere outline of what I mean by the genetic concept. You will see how pregnant it is of possibilities, and at least I hope you may appreciate that this is a concept that must be reckoned with from now on until it has been properly evaluated and taken its place definitely as an interpretative formula for psychiatry.

PSYCHOLOGY AND THE MEDICAL SCHOOL.

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That psychology should bear the same relation to psychopathology and psychiatry that physiology does to general medicine is a truism that is almost a platitude. It is perhaps less obvious, though to my mind not less true, that psychology should rank among the fundamental sciences, on a par with anatomy and physiology, if not with chemistry, physics and biology, necessary for *all* students of medicine, not merely for those who intend to take up certain specialties. Until recent times, however, little effort has been made to introduce this study into the medical curriculum. It will be introduced if the demand is strong enough, and it is the object of this paper to interest this society and urge it to take some action in the matter.

The need of psychological instruction is not an altogether new subject. In December, 1911, it was considered at a symposium at the combined meetings of the American Psychological Association and the Southern Society of Philosophy and Psychology, in which Drs. Meyer, Franz, Prince and others took part. Since then the subject has been brought up at meetings of other societies. But I believe it has not been discussed, at least in recent years, by this association, which, on account of its name, its membership and its size, should be able to exert a strong influence.

Certain specialists need psychology. For example, it is obvious that physiological psychology lies at the basis of neurology. And it is probably that field that Lancaster² had in mind when, in outlining recently an improved course in ophthalmology, he included 15 hours out of a 300-hour course to be devoted to "psychological problems." In otology, rhinology and laryngology, too, there are a few problems that belong in this field. Psychiatry's need of psychology has already been noted.

Besides this, there is a rapidly growing demand for more thorough investigation of the mental states and processes, not only in such groups as the neurasthenic and the very sick, who

come under the observation of the general practitioner, and in such groups as the obviously feeble-minded, the epileptic, and the hysterical, who usually come under the observation of the neurologist or the psychiatrist, but also in such groups as the deaf mute, the slightly backward school child, the defective delinquent, the criminal, the pauper and the prostitute.

Most of these latter groups are defectives. For the best ways of dealing with them the community naturally turns to the physician, though, if there were a large body of trained psychologists, it might turn to them. The school and the police physicians, who usually see these cases in the first instance, are general practitioners, and it would be helpful if they had the requisite grounding in psychology to deal with them. Franz¹ and White⁸ have pointed out the need of such grounding.

But it may be urged that the general practitioner sees after all only a comparatively small number of such cases; that they can be referred to specialists who are sufficiently grounded in psychology, and that the teaching of psychology might well be limited to those who wish to fit themselves for these specialties.

To that it can be answered that since in almost every medical school psychiatry is a required course, its foundation science, psychology, should be taught as a prerequisite. But, even apart from that, not only the specialist but *every* practitioner of medicine and surgery needs psychology.

Lyon,³ reporting last February for the Committee on Pedagogy at a meeting of the Association of American Medical Colleges, states one of the aims of general medicine to be "to give the student as much knowledge as possible of human beings into whose life he must enter in a much broader, more sympathetic relation than that of engineer to machine." Franz¹ calls attention to the fact that the general physician depends on the patient for information about his illness, and that the patient's sensations and feelings have weight in the diagnosis. White⁸ refers to the fact that there is a mental side to every illness, even to a sore finger, and that the patient is a thinking, feeling being. They might have added that wherever the patient's co-operation in the examination and in following out directions for treatment is concerned, there are psychological factors of the utmost importance—factors which are present to a greater or less degree

in all cases except those in infancy and childhood and of unconsciousness and stupor. Moreover the bodily and mental effects of such emotional states as dread (of operation, death, going to a hospital, certain illnesses, etc.), courage, hope, despair are neither negligible nor infrequent; neither are the effects of prejudices, errors, superstitions, or ignorance on the general attitude of the patient toward his illness, his treatment and his physician. These are psychic factors that every physician and surgeon is likely to meet and meet frequently.

Furthermore, it is the psychic factor in all illness and in all therapy that has given such vogue to many of the recent psychotherapeutic movements, whether scientific, pseudo-scientific, or fraudulent. It is the psychic factor that makes the success of the quack, the charlatan and the nostrum vendor. A knowledge of psychology would help each physician and surgeon in the use of that which is true and in the fight against that which is false in all these doctrines and practices. The recognition of the importance of these psychic factors is growing, and some grounding in them must be given, if the forementioned aim of medical teaching is to be fulfilled.

II.

To find out how extensively psychology is being taught in the medical schools of this country, inquiries were made of all the medical schools classified by the Council on Medical Education of the American Medical Association as A + (acceptable), A (colleges lacking in certain respects, but otherwise acceptable), and B (colleges needing general improvements to be made acceptable). No inquiries were made of the class C schools (colleges requiring a complete reorganization to make them acceptable). To the deans of the 85 schools of these three classes the following questions were sent, together with a request for the catalogue, announcement or bulletin of the school:

1. Is psychology required for admission to your school?
2. Is psychology taught in your school?
3. If so, is it a required or elective study?
4. If elective, roughly what proportion of students elect it?
5. In what year or years is it taught?

6. How many hours are given to it?
7. Is the instruction by (a) lecture, (b) text-book, (c) laboratory, or by what combination of them?
8. What text-books are used?
9. Has the instructor in psychology a knowledge of psychiatry gained from clinical experience?

From these questions it will be seen that no effort was made to determine the type of psychology that is taught, except as this might be shown by the text-books.

Replies were received from 58, and bulletins from only 24 of these. Most of the schools are associated with or are integral parts of some university, many of them state universities; most require at least the equivalent of two academic years for admission to the medical school. A few give only the first two years of the medical course, omitting clinical teaching.

The following data are based on the 58 replies received. The extent of psychological teaching is shown in the table:

PSYCHOLOGY IN THE MEDICAL CURRICULUM.

	Class A+.		Class A.		Class B.	Total.
	Full course.	First 2 years only.	Full course.	First 2 years only.	Full course.	
PRE-MEDICAL YEARS.						
Required for admission.....	1	..	2	..	..	3
Advised for admission	3	2	2	..	1	8
Pre-medical course offered....	5	2	4	3	1	15
MEDICAL YEARS.						
Normal psychology required...	1	..	..	1	2	4
Normal psychology elective....	1	1	..	1	..	3
Abnormal or path. psych. required	1	..	1	..	..	2
Abnormal or path. psych. elective	1	..	1	..	..	2
Planning to offer courses.....	3	..	2	1	1	7
Teaching in connection with other courses .....	..	..	8	..	3	11
Total requiring, advising or teaching.....	9	2	7	5	3	26
Ignoring psychology.....	6	..	15	..	9	30
Number replying to inquiries ..	17	2	22	5	12	58
Number of schools.....	24	..	39	..	22	85

PRE-MEDICAL TEACHING.

In only three schools is psychology required for admission.

In eight schools it is scheduled or advised, but not required.

In 15 schools, including all but one of these eight, pre-medical courses in psychology are offered—required in three, elective in 12.

The number of students electing psychology varies from a few to nearly all, but averages about half.

In these pre-medical courses the time occupied varies from a total of five hours to a full year's course of at least three hours a week. Most of those that give such courses teach it for one or two terms.

It is taught chiefly in the second, but sometimes in the first, of the two pre-medical years.

In only three schools has the teacher of psychology had any psychiatric experience, and in two of those it is "limited" or "slight."

Only five mention the text-books used. They are Angell, Seashore, James, Pillsbury, Titchener, Störring, Janet, etc.

The method was not stated in all cases, but appears to be chiefly by lecture, with considerable laboratory work.

TEACHING IN COURSE.

In the medical course proper, only six schools require psychology as a separate study, and five others offer electives, making 11 which teach it. Two more expect shortly to offer electives, and will probably do so next fall, while five others are trying to arrange for it, and may accomplish it within a year or two.

Eleven replies tell of teaching psychology only in connection with physiology or with psychiatry or neurology. In most this does not mean much, but in three it means that a definite number of lectures in the course on physiology or in that on psychiatry is devoted to normal psychology.

Of the 11 separate courses in psychology that are offered, four are described as "elements of abnormal psychology," "the application of psychology to neurology," "pathological psychology" and "psychopathology, psychology in its medical bearing." The other seven appear to be courses in physiological or more general psychology, in which such text-books as James, Titchener, Angell, Pillsbury, Yerkes, Thorndike, and Witmer are used.

The time devoted to psychology varies from 5 to 108 hours, averaging perhaps 45 hours.

It is taught in the first year in two schools, in the second in five, in the third in one, and in the fourth in three.

It is taught chiefly by lecture and text-book; in three schools there is also laboratory work; in one it is taught by lecture and recitation.

In six of these 11 schools, the psychological instructor has had no psychiatric experience; in two he has had slight, and in two considerable. One fails to reply to this question.

These data may be summed up as follows:

Of the 58 schools replying, 30 (over 50 per cent) quite ignore psychology; three require it for admission; eight advise it for admission; 15 offer pre-medical courses. During the medical years proper, six require it, five offer electives, seven are planning to teach it as a separate study, while 11 teach it more or less in connection with other courses.

It is probable that the amount of psychological teaching in the schools that sent no replies is less rather than more than that shown here.

It is of interest to note that in no curriculum that I have seen has psychology been mentioned as one of the fundamental sciences.

This state of affairs, though not good, is encouraging, for there is distinctly indicated by the replies received a growing tendency toward the introduction of psychology into the medical curriculum.

III.

The reasons for the lack of teaching and for the diversity where it is taught are various. They are grouped about two main lines, one the evolution of the science, the other the evolution of the schools.

About the middle of the last century the science of psychology grew out of philosophy. At that time Spencer's materialistic and mechanistic conceptions were influencing scientific thought, especially among English-speaking people. There was, however, no one accepted philosophy, but many philosophies with irreconcilable differences in fundamental concepts. The psychologies

which grew out of these philosophies inherited the defects of their parents, but showed a rather strong tendency to be influenced by the Spencerian environment into which they were born. So, as was natural with young sciences, they dealt chiefly with the concrete, tangible phenomena of sense perceptions, sensations, reflexes, time reactions, etc., and avoided the more elusive but more fundamental and vitally important factors that determine human conduct.

Owing to the irreconcilable differences, due to their origin, there has been no one generally accepted psychology, as there is one physiology, but several psychologies. Hence scientists in other fields have felt a certain distrust of all psychologies, just as they have of all philosophies; and owing to the avoidance of the vital factors which determine conduct, psychology has seemed out of touch with life, often impractical, and not especially helpful where the need for help has been felt. Even the recent growth of applied psychology, as seen in the latest book by Münsterberg and in the studies in animal and human behavior, has not been able to overcome psychology's hereditary defects, though approaching much nearer to what is wanted than earlier efforts did. What is needed is an application of eugenics to psychology. Out of biology, not philosophy, should the new psychology be born, sired by scientists of broad views, not unacquainted with, but unafraid of, the various philosophic viewpoints, and with courage to attack the most complicated and intangible of problems. Such a psychology would be a healthy normal science, well-developed, whose fundamental concepts, view-points and methods would be as generally recognized and accepted as are those of physiology. It would be found helpfully applicable to the various problems of life, and could be taught with as great advantage as physiology now is.

The medical curriculum long antedated the science of psychology. There was therefore no place for this science in the old curricula. The enormously rapid growth of the other biologic and seemingly more strictly medical sciences has been crowding and stretching the curriculum. Hence, though the importance of the psychic factors in disease has been increasingly recognized and the need of psychological investigation of them has been increasingly felt, it has been difficult to make a place for psychology in the medical course. The facts above noted, that psychology has not been a

unitary science and that it only remotely touched the needs of the medical student or physician, have delayed its inclusion as a required course. These are the chief general reasons why psychology is not more generally taught in the medical schools. Others are more local and personal to the individual schools.

IV.

At the above mentioned symposium and elsewhere three suggestions for courses in psychology have been published; one by a psychologist, one by a neurologist, and one by a psychiatrist. Each proponent illustrates the faults of his type, though it is only fair to say that each probably had the conditions in his own school in mind, and that this would greatly modify the plan proposed. It would take too long to even sketch them here, so I will merely offer a few comments.

Professor Watson,⁷ the psychologist, outlines a course with far too much physiological and far too little psychical psychology, and it is too little applied to the needs of the medical student. It makes one think of trying to teach architecture by devoting a great deal of time to building materials and comparatively little to design.

Dr. Prince,⁸ the neurologist, frankly states that the course he outlines is rather supplementary to Professor Watson's than a substitute for it. For a foundation course it lays altogether too much stress on morbid processes, on hypnotism, and on such uncommon conditions as dissociations and syntheses of personalities. Furthermore it is based on his not yet generally accepted theory of the subconscious. Except as an advanced course in psychopathology, it is uneven, with many parts too little and others too much accentuated.

The third, Dr. Meyer's,⁹ outline, is by far the best of the three. Especially good are the biological view point, the recognition of "relativity of effects" (which I call multiplicity or complexity of factors involved), and his insistence on observation and on study of factors which may modify reactions. He perhaps lays somewhat more emphasis on some of the Freudian mechanisms, such as symbolic disfigurements, substitutions, wish-fulfilments, etc., and somewhat less on effects of emotional states, education, formation of purposes, ideals, etc., than I should, thus including

a little more of morbid psychology than a preliminary course should have. But it seems a fairly well-rounded course, helpful to the general practitioner as well as to the specialist.

But destructive criticism is easy, and often thankless, while constructive planning is difficult. It may be hardly fair to criticize any of these suggested courses before they have been tried out, on merely *à priori* grounds, especially as those are the only basis of the following suggestions.

Since the medical curriculum is already so full, the psychology that is added to it should be limited to the actual needs of the student—it should be a strictly applied psychology, with its applications shown throughout the course.

That part of the course in physiology which deals with the nervous system and the special senses could be expanded to include the physiological psychology needed to understand the tests used by neurologists (including various time-reactions, tests for aphasia, astereognosis, etc.), ophthalmologists, otologists, rhinologists, and laryngologists, and to include also the somatic effects (motor, vaso-motor, secretory, etc.) of affective states in general, such as fear, depression, euphoria.

The course in psychology proper should be largely, though not entirely, an observational one, teaching the student to see what the various psychological factors are which determine the conduct and behavior of individuals in the ordinary acts of life. To this end it would be analytical and partly introspective. There should be as much experimental work as is needed to give an idea of the scope and application of the Binet-Simon and other general intelligence tests, free and controlled association tests, memory tests, attention tests, observation and reproduction (testimony) tests, etc. This would give the student a certain familiarity with the ordinary tests used in the investigation of the neuroses, the neuropsychoses, the psychoses, and the states of mental defect.

The student should be taught the factors and mechanisms involved in the learning-process and in habit-formation; in orientation and grasp of the situation in which the person finds himself; in instinctive action; in the formation of purposes and ideals; in the carrying out of the purposes formed. He should be taught the influence of the affects and affective states, not only on the body, but on the other psychical processes and contents; the

modifying effects on mental reactions (both as processes and as content), not only of such bodily conditions at toxæmias, fatigue, permanent or temporary destruction of nerve-cells or nerve tracts, imperfect development, etc., and of other psychic states and attitudes, such as recollections, prejudices, superstitions, and affects like shame, indignation, pride, etc., but also of education, experiences, habit and environment. And he should be taught the general directions in which these modifying factors produce their effects.

The course should be given from the biological standpoint—that all the activities of the individual are reactions to an environment or to other internal activities of his own; that these reactions are determined partly by the environment, partly by the bodily condition of the individual, partly by his capacity to react; and that any given act, no matter how simple-seeming, is complex and multiform, the resultant of a great many factors, many of which are unknown and any one or any number of which is capable of modification.

Some such course as this would prepare the student for the later study of formation of complexes and of delusions, automatisms, blocking, dissociations, thinking difficulties, defects, etc., in the courses on psychopathology and psychiatry. It should be given after the course in physiology and physiological psychology, and would need probably two semesters. The methods used would necessarily depend on the local conditions in each school and on the instructor.

The person who should teach psychology to medical students should know both psychology and medicine; and a knowledge of morbid mental states also is of especial value to such a teacher. Though several of the schools offer academic courses given by psychologists without experience in morbid mental phenomena, some schools question the value to the medical student of psychology as so taught and even the right of the faculty to make psychology a required study unless it be adapted to the needs of the medical student by men trained in psychiatry as well as in psychology. Hence a psychiatrist with a working knowledge of psychology or a psychologist with a knowledge of medicine and a familiarity with mental diseases would be the ideal teacher. The psychological interests of either should be not so much

in time relations, intensities of stimuli, and other factors testable and measurable by laboratory methods, as in the more elusive, less easily definable factors that enable the individual to adjust himself to the constantly changing situations, near and remote, in which he finds himself throughout his life. Though there are few such teachers now, if psychology is taught in the medical schools it will not be many years before there will be enough to teach it well, to the great benefit of the medical practitioners and the communities they serve.

V.

What can this association do?

In its membership are many teachers in the medical schools. If they could raise and agitate the question in their own faculties it would hasten the introduction of this study into those schools. I urge them to do this.

If the association could take official action, in the form of a resolution, strongly recommending the introduction of psychology into the medical curriculum, it would back up and add weight to the efforts of the individual members of faculties.

A committee could be formed to investigate further the present status, the results and the future possibilities of psychological teaching. The reports and recommendations of such a committee could be sent to the various medical schools, to the Committee on Medical Education of the American Medical Association, and to the Committee on Pedagogy of the Association of American Medical Colleges.

Through such efforts, and others that may occur to other members of the association, this desirable end may in time be accomplished.

REFERENCES.

1. S. I. Franz: *Jour. A. M. A.*, Vol. 58, p. 909.
2. W. B. Lancaster: *Bost. Med & Surg. Jour.*, Vol. 168, p. 576.
3. E. P. Lyon: *Jour. A. M. A.*, Vol. 60, p. 1049.
4. A. Meyer: *Jour. A. M. A.*, Vol. 58, p. 911.
5. A. Meyer: *Jour. Abn. Psychol.*, Vol. 7, p. 313.
6. M. Prince: *Jour. A. M. A.*, Vol. 58, p. 918.
7. J. B. Watson: *Jour. A. M. A.*, Vol. 58, p. 916.
8. W. A. White: *Jour. A. M. A.*, Vol. 58, p. 1417.

THE WIDENING FIELD OF PRACTICAL PSYCHIATRY.

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Medical Superintendent of Bloomingdale Hospital, White Plains, N. Y.

The application of the knowledge and ideas which grow out of the study of mental disorders is the task of practical or applied psychiatry. The means employed are those which have been devised for the treatment and prevention of mental disorder in the individual and for dealing with it as a social problem. To a considerable extent they require for their application organized provision and methods usually of a public or semi-public character, and it is with these that this presentation will principally deal.

For many years the task of practical psychiatry was to obtain for the sufferers from mental disorder the simpler requirements of humane and rational care. After these had, in some measure, been accepted as essential to a satisfactory standard, further efforts became necessary in order to secure adequate organization and equipment for the purposes of scientific study and treatment. This has been and still is the task of the present generation. The object aimed at is institutional development with proper regard for the needs of the individual as well as for the safety and good order of society. This task is in itself sufficient to occupy the best thought and effort of those engaged in it and is still far from finished. Institutional development in this country has in the past been shaped and controlled principally with reference to custodial care. The influence and labor of the physicians who have always been engaged in the work have, however, brought about such advances in organization, equipment and methods for the purposes of scientific study and treatment that no organized system of care of the insane is now so poor as to lack some provision for them.

This much having been accomplished, it is now becoming evident that further adjustments will be needed in order to deal with the problem on broader lines. In social development generally a stage appears to have been reached in which the community as a whole is disposed to seek its own sanitary welfare and to

devote public funds to this end rather than depend upon private philanthropy. Philanthropy, which formerly spent much in providing hospitals and other institutions for purposes of relief, is now more inclined to provide for studies in social problems and for experimental demonstrations of the best methods of dealing with them, with a view to leading society to provide for itself the permanent measures required. Thus, in New York state, the State Charities Aid Association started after-care for the patients discharged from the state hospitals of the metropolitan district and carried it on until its value had been demonstrated and it was taken over by the state. At present the association is engaged in trying to demonstrate the usefulness of out-patient departments and social-service work in dealing with mental disorder, with a hope that the state will eventually adopt them as definite features of its system. Much of the work of the large foundations, such as the Sage, Carnegie, and Rockefeller, and such organizations as child hygiene and child labor committees, tuberculosis committees and associations, sex hygiene societies, eugenics societies, mental hygiene committees and societies and other organizations, is carried on with, at least as one object, the informing and convincing of the public in regard to the advisability of applying for itself demonstrated remedies for existing social evils and defects. It is now recognized that disease, as well as crime and poverty, cannot always be adequately dealt with by specific measures applied to the individual, but that the conditions under which the individual failed must be studied with a view to readjustments, and to the application of such social remedies as may be needed. This method of dealing with disease has been generally accepted and a social-service department has become a recognized need in the work of every well-organized general hospital and dispensary. The patient is no longer regarded simply as a separate individual, but also as a social unit, whose cure cannot be considered complete until he has been restored to social adaptability and efficiency. Thus the purely humane and individualistic period in hospital development has given place to a period in which the broader needs of social hygiene and of social efficiency are understood, and the work is being shaped so as to meet more fully the vital issues both in individual and in community life.

It is evident that, in the further development of organized systems of dealing with mental disorders, this view of disease

and its treatment will be given more consideration. A period seems to have been reached in which it can be plainly seen that the skilled attention which has been given to institutional development will now have to be extended to other aspects of the problem of dealing with mental disorder in the individual and in the community. Already in the more highly organized systems new activities have gradually developed to this end. Provision for hospital care only, without regard to the neglect or ill treatment which the patient may be subjected to before he reaches the hospital or after he leaves it, can no longer be looked upon as fulfilling the requirements of an adequate system. It is now recognized that the problem of mental disease must be dealt with in closer relations with the conditions under which it arises. This view has already led to certain developments and extensions in the organized systems of care of the insane in various parts of the country. I shall refer specifically only to those which have occurred in New York state, not because they are necessarily the best, but because they will serve to illustrate and I am better informed in regard to them than to those of other states.

During the past few years the field of practical psychiatry in New York state has been extended in the direction of earlier and better attention to the cases before they have been brought under hospital treatment, and after they have been discharged. To this end, in 1910, medical health officers were substituted for overseers and superintendents of the poor as the officials to take the necessary steps for the relief of the cases met with in the various communities. This provided the foundation for a system of dealing with the problem medically by a steadily improving medical department of the state government. The health officers are, indeed, limited by lack of the proper facilities and by their lack of knowledge and training in practical psychiatry. It is possible, however, to overcome these limitations; in fact, in some places improved methods and facilities were established soon after the law went into effect, and several of the health officers have tried to increase their knowledge and efficiency. The State Charities Aid Association is also, in co-operation with local organizations and with interested individuals, carrying on a persistent agitation and effort for the establishment, in connection with general hospitals in the larger cities, of suitable psychopathic departments or wards where prompt medical and nursing at-

tention may be given to patients who may, if necessary, be later transferred to the state hospitals. In this connection it is interesting and instructive to note that the first organized developments in practical psychiatry in this country made provision for the treatment of mental disorders as part of the work of general hospitals. In the annual report of the Board of Governors of the New York State Hospital for the year 1797 the following statement appears:

"Persons laboring under incurable Decrepitude, or long continued Ailments of any kind. are considered as fitter Objects for an Almshouse than for this Hospital, which is properly an Infirmary, for the Reception of Such Persons as require—

Ist Medical Treatment.

IIId Chirurgical Management.

IIIId Maniacs, and

IVth It is in contemplation to fit up a Laying-in Ward, etc."

The intention was evidently to provide hospital treatment for the more acute types of mental disorder. In fact, cases of mental disorder were admitted to the hospital from its opening in 1793. In 1808 a special building for their sole use was provided. The ground plan of this building and the case records of some of the patients who were treated in it are still in existence and show that the standards were quite good. It is unfortunate that when, in 1821, following the world-wide movement for better provision for the insane generally, the Society of the New York Hospital established Bloomingdale Asylum outside the city, no provision for mental cases was retained at the general hospital. It was not until many years afterwards that it became so apparent that hospital provision near at hand was essential to even decent standards that a psychopathic or observation pavilion was established by the city at Bellevue Hospital. Still later, a corresponding provision was made at the King's County Hospital in Brooklyn. In 1902 a pavilion for the treatment of mental disorders was opened at the Albany Hospital. It is now recognized that a broad development of such provision throughout the state is essential to an adequate system of dealing properly with the cases as they occur in the various communities. This development should appeal to private philanthropy, as the public could be readily induced to provide for the support of such additions to the resources of the general hospitals if the buildings could be secured. In order that the standards and methods of local provision for dealing with mental disorder may be shaped and controlled by the state

it has been proposed that they be placed under the supervision of the State Hospital Commission. The legislation necessary for providing for this will undoubtedly be obtained in the near future. The greatest difficulties relate to making suitable provision for the prompt relief of cases occurring in the rural districts and in the small towns and villages. In order that no delay might be experienced in utilizing the state and private hospitals, provision was made a few years ago for simpler methods by which patients might be admitted on voluntary application or without a judge's order. During the past winter a provision for the admission of patients to the state hospitals for observation, similar to what is already provided in Massachusetts, was passed by the legislature as part of a general bill amending the insanity law, but the bill was vetoed by the governor. Another provision for bringing the state hospitals into closer relations with the communities which they serve has only recently been signed by the governor. This authorizes the state hospital superintendents, with the approval of the commission, to establish, at suitable locations within their districts, out-patient departments. A department of this kind has been conducted for some years at St. Lawrence State Hospital and for a shorter time at the Long Island State Hospital. The law recently enacted will permit of expenditures for the purpose. Out-patient departments for mental disorders are also conducted in connection with the psychopathic department at Bellevue Hospital, and in connection with some of the medical schools and general dispensaries. A special dispensary is also operated under the auspices of the State Charities Aid Association. There is also an out patient department, where mental cases receive attention at the Neurological Hospital. At most of these departments physicians attached to the hospitals for mental disorders are in attendance. Patients on parole from the state hospitals are referred to them with a view to observation and treatment. They will also serve a useful purpose by the discovery among those who apply of persons who are not safe to be at large. And they will provide places where skilled attention can be obtained for many cases of mental disorder who would, without this provision, be neglected or ill-managed.

The advances which have been made in provision for earlier skilled attention to persons suffering from mental disorders have reduced the extent to which the police are called upon in deal-

ing with the cases. In 1909 more than half the patients received at the psychopathic department at Bellevue Hospital were brought in under a police system. Since then the methods have been changed and a special ambulance and nurses are sent from the hospitals for the patients when a request is received from a physician, an officer of an organized charity, or certain relatives and other responsible persons designated in the law. This is in harmony with the state system which requires the superintendents of the state hospitals to send nurses after the patients whose admission to the hospitals has been arranged for.

The need of more attention to the domestic or social readjustment of patients who are under treatment for mental disorder has been made more clearly evident by the advances in psychiatry and by the more thorough work which is now done in the study of the cases. To provide for this after-care or social-service work has been undertaken. The result, in at least one state hospital in New York, has been a large increase in the number of patients who have been enabled to leave the hospital. Social-service work is also done in connection with out-patient departments and, with a view to the prevention of serious breakdowns, by the mental hygiene committees.

The work of the mental hygiene committees and societies has for its object the better treatment of persons who are suffering from mental disorder and the application of what has been learned about the nature and causes of insanity to its prevention. It has been made possible by the advances in psychiatry and by the general movement for social hygiene. It is a part of a phase in social development and it is the duty of psychiatrists, who alone have the necessary knowledge and judgment, to enter into it and shape and direct it in such a way that it may be practical and really useful. Wherever the work has been undertaken superintendents and other physicians attached to the hospitals for mental disorders have done much to bring about such success as has been met with. The work involves the spreading abroad of useful information relating to the nature and causes of mental disorder by means of literature, lectures, and exhibits, the promotion of useful legislation and of better measures of dealing with the cases and with the problem generally. Literature can be readily distributed to visitors to the hospitals for mental disorder simply by giving them an opportunity to take it. I have been surprised

to see how quickly it disappears when placed in the entrance hall of even a small institution. In New York state physicians attached to the hospitals have assisted in the preparation of literature and have delivered many addresses in connection with the work. An effort has also been made at some of the hospitals to cultivate closer relations with the medical practitioners in the neighborhood, with a view to mutual helpfulness. The physicians who have signed the certificates are invited to attend the staff conferences, at which the patients in which they are interested are presented. Brief abstracts of the findings in the case are sometimes forwarded beforehand. Special conferences are held, at which set topics are discussed, and the physicians in the vicinity or in the nearby city are invited to attend. At one of the state hospitals the superintendent has informed me that eighteen practitioners of the city have been present at the Saturday morning conferences. My own experience at Bloomingdale Hospital is also encouraging. To make the meetings successful, the topics should be chosen with reference to the illustrative material available. They should be presented in a simple, practical way, with a view to bringing out plainly and pointedly the natural history of the condition under consideration. A fair balance between organic and functional material is advisable in the program, which should be rather short. An informal, modest social feature will add to the occasion. There can be no doubt of the increasing interest of the medical profession in the subject of mental disorder and in the relation of mental states to conditions of ill-health generally. A comparison of the programs of medical societies and of the contents of medical journals of ten or fifteen years ago with those of to-day will convince any one of this. The advantages of this growing interest and intelligence in the work of dealing with the problem of insanity are apparent. Other organized movements which have for their object the promotion of sex hygiene, child hygiene, and eugenics, have also an important relation to the aims of psychiatry and need, in the practical work which is growing out of them, the special knowledge and experience of the psychiatrist.

This brief survey of some of the directions in which organized psychiatric activity is extending shows that in further developments provision must be made for broader lines of work than simply institutional care. The following features seem now to be essential for efficiency in any public system :

1. *State Organization*.—The whole system of public and private provision must be under some measure of direction and control by a central expert body.

2. *District Organization*.—This has on several occasions been advocated and outlined by Dr. Adolf Meyer; the state hospital of the district to be the central feature and the influence under which standards and methods should be shaped and controlled.

3. Local and medical officials, not poor-law officials, to attend to the local needs in providing for the cases which arise in each community. The methods of these officials to be under state supervision and control.

4. Local provision for prompt hospital treatment in connection with general hospitals or separate, but not in connection with almshouses or police provision. The confinement of insane persons as such in jails or lockups to be prohibited by law, as in New York state. Local provision to be under state supervision.

5. Prompt admission to hospital treatment to be facilitated by means of simple emergency procedures and admission on voluntary application. The transfer to the hospitals to be made by qualified nurses only, as in New York.

6. Out-patient and social-service departments to be established in connection with state and local hospitals and dispensaries.

7. The hospital physicians to cultivate mutually helpful relations with the medical profession of the district and the state.

8. Co-operation between the public system and organized official and philanthropic work for the prevention and for the better treatment of mental disorders.

These are features which are one by one, here and there, being added where the best systems of dealing with mental disorders prevail. They indicate the lines of progress. They are the outcome of the recognition of the need of a broader activity than that of institutional development only. Many centers and kinds of activity and many more workers are required to deal efficiently with the problem of mental disorder, to distribute the burden, and to bring about prevention. A system which will help to bring these into existence and will shape the standards and co-ordinate the work of all towards the one main object is what should now be aimed at rather than the perpetuation of almshouse methods or even of state care in a few widely separated large institutions.

PROBLEMS WITH THE INSANE.

By L. VERNON BRIGGS, M. D.,

President of the Medical Staff, Boston Dispensary; Member of the Massachusetts State Board of Insanity; and Commissioner of the Alien Insane of Massachusetts.

I feel more and more, as I write of the mentally ill, the temptation to eliminate the word "insane." That word really conveys no more idea of the condition of our mentally ill than does the word fever convey to us any particular form of disease. Fever at the present time is considered only a symptom or consequence instead of a disease, with different manifestations, as was the case many years ago. Up to the present time the word "insanity" has, to a great extent, been used as comprehensively, or loosely. I believe that this society would do well to take some action tending to eliminate the use of the term, "insane," as connected with hospitals and their patients. If mental conditions are (as most of us expect will soon be proved) only symptoms or results of physical disease, the terms insane, mentally ill and mental disease will have to be done away with, and the illnesses from which the individual suffers, such as tabes, syphilis, pneumonia, typhoid fever, general paralysis, auto-intoxication, etc., will take their right places in our diagnoses. Certain forms of disease will then be classed as irresponsible and committable which will more clearly define the medico-legal case.

The construction of most of our present institutions for the mentally ill does not allow a proper classification. The result is that in most states, including Massachusetts, one finds under one roof acute and chronic patients, insane criminals, epileptics, feeble-minded, alcoholic and insane alcoholics, senile dementias and moral degenerates, and often several of these classifications in the same ward.

We should not foist the criminal insane on our unfortunates who are sent to the state institutions. The criminal insane should be a class by themselves. They need different treatment and supervision by men who have different training than that required

for the non-criminal. We are too far advanced in the treatment of the so-called insane to continue any longer with such heterogeneous groups to handle. If we are obliged to use our existing buildings, we should classify our patients, so that different classes should occupy different wards; for instance, there should be a group of the hitherto so-called early cases of dementia præcox in one ward, where intelligent work could be carried out by reeducational methods, such work as is now being done by Dr. LaMoure at our Gardner State Hospital. Other groups should be made so that each particular group may receive in its own ward the most skillful treatment tending toward improvement or recovery—more individual treatment.

While there should be a variety of occupation in each hospital to meet the therapeutic needs of individuals, every hospital should tend to excellence in one industry. In this way many patients who would otherwise be thrown into occupations in which they were previously engaged would be trained in other occupations, which would be more diverting to them and of more therapeutic value. At the same time the other institutions could depend upon certain hospitals for certain supplies, and each would feel an interest in supplying to the other institutions a certain product.

There is no question but the mentally ill should be treated as all other sick people are. They should not be sent to different parts of the state in isolated communities and forgotten, but be where they can receive the visits of their friends and relatives.

The public are now demanding that they shall receive active treatment with a larger percentage of cases discharged as cured or improved. They are not going to be longer satisfied with safe custody, or even comfort, kindness and skillful management.

Dr. William L. Russell says: "During the past twenty years a great change has taken place in the standards and methods and the public is rapidly learning to expect something more for the inmates of the institutions than simply safe custody, comfort, and kindness." Broader medical training and more elaborate equipments are necessary in the hospitals for the insane than for treating simple surgical and medical diseases in the general hospitals, instead of the reverse, which is now generally the case.

The rules and regulations of hospitals should include increase of salaries of the medical men according to their development and

length of stay. They should be allowed to marry and have home-like surroundings. These are among the inducements which should be held out to prevent the continual vacancies from which almost every staff suffers, and which means loss of efficiency.

In many states the superintendent, who is a physician, is the chief executive, does the purchasing, has charge of the new construction, and is so occupied by other necessary administrative duties that he has but little time for medical work. While the superintendent should be the chief executive, the business end of the institution should be so provided for that most of the superintendent's time would be given to his medical work.

An efficient purchasing bureau for all the hospitals, if properly run, should lessen the cost of supplies and increase their quality. It is true that a good many superintendents can keep track of the market and take advantage from time to time of the fluctuations, but this should not be the work of the superintendents. I wish to lay great stress on the fact that the superintendents, if they are the medical heads, should do the medical work, and not be business agents.

The present system of large, unwieldy institutions under one superintendent and often inefficient workers results in an economic loss and means that the taxpayers have to suffer.

One or more large training schools for nurses and attendants should be established in each state, or perhaps in each hospital, where the entrance examination should be at least the equivalent of a high school diploma. The student should receive a small salary and contract to remain while training. A diploma and a position in a state hospital with a competent salary, and with suitable accommodations, should be the inducements for such training. The results of such a service would soon be noticeable in the improved condition of patients, by a less number of employees required, and with a fewer assaults, etc.

If private patients are admitted to public institutions, either they should receive no different accommodations, treatment and food from the public patients, or else they should be entirely separated from the public patients, and housed in a house or houses in a different part of the grounds, with one or more physicians from the staff especially assigned to them, as is the case at the great Am Steinhoff Hospital in Vienna.

Each state should establish a psychopathic hospital and school where physicians who have had no previous experience in the care and treatment of the insane, but who intend to take positions in the state hospitals, should be required to attend certain prescribed courses. This central training school should be able to supply vacancies which are now difficult to fill.

There should, I believe, be a central laboratory, preferably at the psychopathic hospital in states that have one, where the pathological work of the hospitals should be carried on. In this way duplication of expense would be avoided, and more accurate and comparative work would be done. This does not mean that the state hospitals should not do some laboratory work.

The imposing type of institution built in blocks and from three to five stories high at a cost of from one to five thousand dollars per capita is, I am glad to say, becoming a thing of the past. The factory type should never again be used. Smaller and more home-like buildings are becoming popular, and I hope the cottage plan will continue to gain in popularity.

The modern institution for the insane should be so arranged that the reception service and hospital building for acutely sick should be separate from the rest of the institution; of fire-proof construction and not over two stories in height. An infirmary building should be provided of similar construction. Small buildings for very disturbed cases are needed, so planned that the excited patients should not disturb one another. These buildings should be homelike, attractive, and of colonial or some pleasing architecture.

I believe with Dr. Adolf Meyer in redistricting, and in the building of small hospitals serving the communities in which they are situated.

If plans now pending in Massachusetts are carried out for custody of defectives, of which there are probably as many as there are insane in the state, most of our older institutions could be used to advantage for them, and new hospitals for the mentally ill, of from 800 to 1000 as a maximum, could be built on the redistricting plan. With hospitals of more equal size distributed through the state, a better classification of salaries, rules and regulations would be possible, and a more highly educated type of person could be secured to nurse and care for the patients.

The time has come when each community should take care of its own, as Dr. Meyer is advocating in Maryland. He says: "There should be a more circumspect distribution of hospitals over the state, according to centers of population, and not merely according to cheapness of the land or possibly political considerations." "But here, again," he says, "we find an interesting fact; that the counties remote from the existing hospitals have fewer cases discharged and sent home than those nearer the hospitals." "Lack of interest, if it exists, is due merely to ignorance of the facts, to the tendency to institutionalize psychiatry, to consider it merely the business of asylums, and to forget that mental disorders often take months to form before they come to the notice of state authorities—months in which the most important chance for work should not pass without help from experienced quarters." "We must attack things in concrete cases, and in this respect the district idea, and the idea of small hospitals responsible for the health of their districts, must be the ideal policy of the state and the community." . . . "Instead of going on building large hospitals, with their pseudo-economy, we must aim to give well-defined districts what they need, not only to mend, but to prevent a gradual increase of burdens. A sufficient number of small, live, active hospitals, from which work can be done on the spot and according to the needs of the locality, means infinitely more than a few huge asylums and monuments of resignation, no matter what excellent work is done within them. As long as they fail to reach out, our hospitals for the insane are standing approvals of fatalism concerning faulty ways of conduct of life."

Opening the hospitals and judiciously inviting the public to more freely visit them, and educating the public through the social service and eugenics departments, and by papers or lectures read by the staffs, to gatherings in the communities, even having hospital visitors from the community, will tend to educate the public in the right direction.

An out-patient department connected with each hospital, though not necessarily on the grounds of the hospital, and the payment of small salaries to the trustees, composed of scientific as well as business men, who would be chosen from active lives, will tend, we hope, toward the solving of many problems.

As Commissioner of the Alien Insane of Massachusetts, I feel more strongly than ever that the alien insane are a problem of greatest importance. They form a very considerable part of our whole insane population. The work of the New York commission and others should be followed by every state and memorials and committees sent to Congress to urge better laws and treaty obligations. I hope we shall receive a valuable report at this meeting from the committee appointed last year. Government hospitals should take care of the aliens who are now taken care of by the several states for humanitarian reasons or because there is no other course open to them.

Social service should be connected with each institution. If properly organized such a service will improve home conditions throughout the state and prevent many duplicate commitments from the same family or environment. It will also facilitate early discharges by making a survey of cases in the hospital and a survey of the community conditions into which such patients will be discharged, that the paroled or discharged patient may be placed in the most advantageous surroundings on leaving the hospital or being transferred to what should be an ever-rapidly increasing group. I refer to the boarded-out patients. The follow-up work and after-care of the discharged cases to prevent a return to the hospital would greatly reduce the recommitments which now amount to a considerable percentage of our so-called insane population in institutions.

Money should be spent at the beginning for the prevention of insanity by social service* and similar agencies. It is just as much a necessity, if not a more crying need, than that many thousands of dollars should be spent at the terminal end of the disease in laboratories.

The Governor of Massachusetts sent the following message to the legislature this year:

* The Massachusetts State Board of Insanity at its meeting in August, 1913, voted to employ an expert in Social Service work to organize and systematize the work of prevention and after care in each of the State Hospitals for the Insane.

THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE DEPARTMENT, BOSTON, May 5, 1913.

To the Honorable Senate and House of Representatives:

I transmit herewith a letter from Dr. L. Vernon Briggs, of the State Board of Insanity, urging the necessity of more effective supervision of the families of the inmates of our institutions.

In this connection I would draw attention to our present failure to accord adequate protection to the dependent wives and children of men who are shut up by the state in our institutions, whether because of crime, sickness or insanity.

Our institutions are conducted primarily for the protection of the public. At the same time, our system ignores very largely the fact that, in removing the bread-winner of a family, we expose that family to the very conditions of destitution and helplessness which are most of all conducive to crime and permanent pauperism.

We are, for example, sentencing drunkards to long terms of imprisonment, clothing, feeding and housing them, and giving them expert medical service. In a majority of cases these men possess some wage-earning capacity, but in shutting them up we permit their families to be turned out on the streets, to get what they can from public or private charity, or both. The time will come, in my judgment, when we shall recall this present practice with profound humiliation.

After mature consideration of the various classes of persons confined within our institutions, I have come to the conclusion that we should first of all consider the dependent families of those who are confined in our insane asylums.

Moreover, every step which the commonwealth can take to relieve our institutions of any of their charges and make them self-supporting and useful members of the community should be taken at the earliest possible moment; also every possible step toward the after-care of our mentally ill and the prevention of such illness.

These steps are requisite in view of the crowded condition of our institutions and the increasing demands for additional buildings.

I am informed on the highest authority that our present policy is leaning too much in the direction of merely shutting up mild cases of insanity.

In other countries—notably in Scotland—public policy has established a system of removing mild cases from the institutions and finding suitable private homes in which they may be cared for.

While we are now making, to a very limited extent a somewhat similar provision, I have become convinced on the testimony of officials connected with our institutions that we could probably discharge from five to ten per cent of the insane now confined in the institutions of the commonwealth if we maintained any adequate means of locating them either in their own homes or in other places in which they could be boarded out.

I would, therefore, direct the attention of the legislature to the recommendation made by Dr. Briggs in favor of the establishment of a so-called social service to be conducted by the state under the supervision of the Board of Insanity.

Social service as understood and practiced elsewhere to-day aims to furnish friendly advice and co-operation on the part of the state for the benefit of the wives and children from whom the wage-earner of the family has been removed through the operation of law. For example, a mechanic becomes suddenly afflicted with some form of insanity and public safety demands his immediate seclusion in an institution. Surely, the commonwealth owes some obligation to the wife and children who are thus suddenly and without any provision or warning deprived of their means of support.

In many instances friendly counsel and advice in regard to the economical organization and conduct of the household, or in respect to securing positions for the wife, and the children of proper age, would be sufficient.

Moreover, many insane people retain sufficient reason to brood over the helplessness of the families from whom they have been removed, and whom they have been forced to leave without protection. This fact in itself may be sufficient to preclude the hope of a cure in many cases.

I believe that social service work should also be established with respect to the families of our prisoners, and that the latter should be more efficiently occupied in productive labor.

I have repeatedly called public attention to this latter consideration, and am confident that the pending reconstruction of our penal system will result in the establishment in Massachusetts of much needed improvements.

I transmit the accompanying letter from Dr. Briggs, and with it the draft of a proposed statute, in the sincere hope that this legislature will take cognizance of the conditions herein set forth and will make a beginning, at least, toward an ultimately complete provision for the protection and assistance of the families of our insane, in all cases where other than public means are lacking.

If we continue to ignore the possibilities of this modern method of providing for the insane, we must continue to make rapidly increasing appropriations, as at present, for the permanent state custody of practically all cases of insanity within the commonwealth, however mild the form of the disease may be.

EUGENE N. FOSS.

THE COMMONWEALTH OF MASSACHUSETTS.

BOSTON, April 25, 1913.

GOVERNOR EUGENE N. FOSS, *State House, Boston, Mass.*

My Dear Governor Foss:—While the present legislature is in session I hope you will present to them the need of taking some action toward

definitely and intelligently stopping the increase of the state's dependents. Up to the present time the state has in the main devoted its resources to housing propositions so far as this class is concerned. I feel that the commonwealth should now take immediate action toward the prevention of the constant increase in this class who are multiplying faster than we can build institutions to accommodate them.

Social service properly organized is our first great step. This does not mean a body of untrained volunteer workers untactfully entering the homes and grappling with the private affairs of our citizens, but a body of trained workers without regard to sex or creed who experience has proved are welcome in every home and community in our land. They can do as good or better work among the mentally ill than is now being done by an army of faithful workers to stamp out tuberculosis throughout the state.

One or two of our state hospitals are doing some work along social service lines and one or two are doing some work on eugenics, but there is no organized work and no means have been provided for organizing and carrying the work out properly.

If the state would provide the small amount of money necessary to organize this year it would be saved the care of a good many dependents who will have to be taken care of the rest of their lives if we delay another year.

Sincerely yours,

L. VERNON BRIGGS.

It is obvious that money spent for the prevention of insanity will be a saving of intelligence as well as money to the state, but in spite of this fact thousands of dollars are spent in housing terminal cases and in laboratories for the study of pathology, and, with two or three exceptions, there is not a state in our union that is spending any money in organized prevention. In closing my paper I quote the following from the 6th Annual Report of the Trustees of the State Lunatic Hospital at Worcester, Mass., for 1838, of which Horace Mann was chairman. They say: "The great object at the hospital is the cure of insanity or the mitigation of its sufferings. The great object of the state and of individuals should be its prevention. The hospital is succeeding pre-eminently well in accomplishing the former; what can be done by the state and by individuals to effect the latter purpose?"

OCCUPATION AS A REMEDIAL AGENT IN THE TREATMENT OF MENTAL DISEASES.

By ARTHUR V. GOSS, M.D.

Theologians formerly taught that in consequence of the sin of our remote ancestors, Adam and Eve, the Deity imposed upon mankind the curse of labor; but the theologians were wrong, as usual, for universal experience has taught that labor is a blessing, while idleness is a curse.

A philosophical divine of the last generation used frequently to preach upon "Hope"; upon which occasions he always made use of the familiar quotation, "While I breathe I hope," transposing it, however, to read "while I hope, I breathe." In like manner we should say *not* "while I live I labor," but "while I labor I live"; for we only live while doing our part of the world's work, and when we cease to labor, we cease to live, and the great world moves on without us. Idleness, either voluntary or enforced, is a living death.

That suitable employment is the best remedy for many ills of mind and body, has long been recognized. Of late years, however, its value has begun to be more generally appreciated; also the important fact that its benefits can be extended to a much larger number than was formerly believed. Among no class of patients are the beneficial effects of employment more marked than among the insane in our hospitals. Employment as a remedial agent has been made use of in the Taunton State Hospital from the time it was opened in 1854 until the present time, a period of nearly 60 years. It cannot be otherwise than interesting and instructive to consider what results have been obtained and what conclusions drawn in consequence of the employment of patients in this institution during this long period, and my paper will be confined to considering the use of employment as a remedial agent in this hospital only. In his first annual report for the year 1854 the first Superintendent, Dr. George C. S. Choate, writes as follows:

In traversing the halls of lunatic hospitals, even those where no expense has been spared in any department, every person must be struck with one

great event which stares him in the face at all points. I mean the lack of occupation.

At least two-thirds of the inmates of lunatic hospitals are capable of some employment and need it, as much as sane people, or more; and yet even in institutions where the greatest pains *have* been taken to introduce new amusements, and everything which can make the time pass agreeably and profitably, a large portion of it is spent by most of the inmates in sheer apathy and idleness.

In acute cases, after the excitement has passed away, I believe that employment of some sort is more important than it is in any other situation in which a man can be placed. The great object of treatment in such cases must obviously be to direct the attention from self, from the subjects of delusion, and fix it, without exercising it too severely, on some other interesting object. This can in no way be so effectually done as by interesting the patient in some occupation.

In melancholy cases, what so likely to be beneficial in calling the mind away from gloomy meditations? And in all how necessary is employment to induce sleep, which is so frequently disturbed in insanity, and to promote the health of all the animal functions, which is so important to health of mind.

During this first year 30 per cent of the men were employed at farm work and 17 per cent of the women at domestic work in the different departments. Dr. Choate, in this same report, asked for work-shops for both sexes, but especially to employ the men during the long months of winter, when farm work was insufficient.

He did not get the money to build his work-shops, and in his reports from 1856 to 1860 he deplored the lack of sufficient suitable employment for men; but from 1861 to 1869 the tone of his reports changed materially.

The commission which purchased the land for this institution was evidently endowed with the same degree of wisdom with which other similar commissions have been blessed, for they purchased an exhausted farm, consisting of a barren, sandy hill, surrounded by about 140 acres of scrub and swamp plentifully strewn with rocks of all shapes and sizes. Dr. Choate set his patients to clearing off the rocks and under-brush, draining the swampy portions and gradually building up profitable farming land.

Each report from 1861 to 1869 records more men employed. Their works remain to-day, lasting monuments to their labors and to the wisdom that directed them. In the meantime women

patients in increasing numbers were employed at various forms of domestic work and sewing.

In this particular instance the failure of Dr. Choate to get his work-shops was a blessing in disguise, for the employment of patients was thus started and directed along lines beneficial to all concerned, regarding the hospital as a co-operative institution or community, while otherwise the labor of the patients would most likely have been commercialized and consequently much less beneficial.

Dr. Choate resigned in 1869 and was succeeded by Dr. W. W. Godding. In his first report for the year 1870 Dr. Godding writes:

The problem how to occupy the idle and aimless lives that meet you on every hand among the insane is very difficult of solution. Labor, when it is cheerfully taken up, especially out-of-door labor, is undoubtedly the safest and best occupation. In this direction our farm is and will continue to be a source of income. The crops of health that can be taken off of it are inexhaustible.

Dr. Godding's reports from 1870 to 1876 record the results of his successful endeavors to furnish varied employment for both men and women. The report for the year 1876 is a very important and valuable one, as it clearly sets forth the status of the employment of patients at that time and the principles upon which it was conducted. These principles remain in force at the present time, somewhat modified by time and circumstances, but unchanged in the main.

They are as follows:

I. All patients who are physically able should be interested in some suitable employment as soon as the acute symptoms of their mental disorders have subsided.

II. Effort should be made to provide employment that is best adapted in kind and amount to the condition and needs of the individual patient.

III. Occupations engaged in by patients should be, for the most part, those of direct value to the hospital, regarded as a co-operative community.

IV. Parole should be granted to suitable able-bodied patients who engage in some employment.

Of these principles Nos. I and IV have been modified by time and experience. At the present time we do not wait for the acute symptoms to subside before interesting the patient in some occupation, and while we do not grant parole to able-bodied patients

who will not work, we do grant parole to suitable patients who are not physically able to work.

Dr. Godding resigned in 1877 and was succeeded in 1878 by Dr. J. P. Brown. In his annual report for the year 1881 Dr. Brown describes at length the variety of occupations in which patients were encouraged to engage and closes as follows:

There can be no doubt that many are benefited by suitable labor, and every physician of extended experience in the treatment of insanity has seen not a few cases where systematic occupation gave the first impulse to recovery. What is needed is diversity of employment to meet different cases. Work as a curative measure should suit the taste of the individual, that it may give pleasure to the mind as well as exercise to the muscles.

During the whole of Dr. Brown's administration, from 1878 to 1906, the employment of patients grew normally and steadily with constantly increasing variety.

During his administration in two instances the labor of patients was employed commercially, but in both instances it was abandoned, as it was found best to confine our output of manufactured articles to our own needs and to divert the extra labor into other channels.

Coming to the present time, the old New England co-operative community, although not so called, producing all the necessities of life by the labor of its members, was an ideal industrial community. That an institution can only distantly approximate to such a community is very likely true, but that is the ideal towards which we are striving, and the closer that we can approximate to it the nearer we shall draw to success. Our industries have been developed and are organized along lines of utility—for the most part. At the present time we are introducing others less useful, but more ornamental. These, however, are secondary and accessory to the more useful ones.

During the year ending September 30, 1912, out of a total number of 1598 patients under treatment 1190—672 men and 518 women, or 74 per cent of the whole number of persons under treatment—were engaged in some employment. Out of a daily average number of 1034 persons under treatment about 687—394 men and 293 women or 66 per cent—were engaged in some employment. Of these 480, or 69 per cent, were engaged in other than ward work.

We try to promote industry as far as possible by classification. Our reception wards are in two divisions; the acute division and the industrial division. As soon as the most acute symptoms have in a measure subsided the patient is taken to the industrial division, where he finds an atmosphere of industry, nearly all doing something; some of course more than others, and he naturally goes with the current.

Observation on these reception wards during the past year show that about 75 per cent of admitted women begin to take up some occupation within ten days after admission, and about 50 per cent of admitted men within the same period. The greater proportion of women is due largely to the fact that there is a greater variety of in-door occupations that women readily take up than in case of men. We are now striving to increase the variety of in-door occupations for this class of men.

As the patient's symptoms improve he goes to a convalescent ward, where greater freedom prevails, and from there home when sufficiently restored, or if his mental trouble proves to be of the more chronic variety he goes either to the colony group or to some ward where he will best classify. A comparatively small residuum is relegated to that eye-sore to all hospital men, the refractory ward, and even here, something is done by way of occupation, though not as much as we hope to do in the future.

Now let us briefly review the various industries and kinds of employment conducted in this institution at the present time. First, there is the daily routine work of the hospital, the farm, kitchen, laundry, stable, engineer's department, domestic work of all kinds, etc., in all of which patients take an active part.

The very best work for the men we have found to be work on the farm and grounds, and a large number are so employed; for a certain number, however, in-door work seems desirable and we have several shops in which such are employed.

On our farm we are now producing our milk, pork, eggs, small fruits and vegetables, with the exception of potatoes, of which we only raise a part, and considerable hay and fodder of various kinds for our stock.

In our shops we make and repair all our boots, shoes, slippers, moccasins, all men's clothes, with the exception of underwear and stockings; all our mattresses and pillows; and we repair,

renovate and upholster furniture. We also make brooms, brushes of various kinds, door mats and various kinds of heavy baskets.

For the women we have found, for the majority, domestic work and sewing to be the best. In regard to sewing, we do not have a sewing-room, but do all our sewing on the wards. This method experience has taught us to be the best. One of our principles is that all work should be done in the manner most natural to the doer. It is natural for men to go to the field and shop, but women do their work, however varied it may be, at home. Women patients working thus on the wards make and repair all clothing for women except knit underwear and stockings, all table linen, bed linen, and the thousand and one articles used about a large institution. They also make up men's clothing cut in the tailor shop, knit stockings, make wool puffs (which we use to a considerable extent instead of blankets), various kinds of rugs, numerous fancy articles, embroidery, lace of various kinds, baskets, etc. Very few things made are sold, as our endeavor, as before mentioned, has been to develop our industries entirely along co-operative lines.

Although women's work is mostly in-doors, during the summer months for several years past some women have been employed at such out-of-door labor as cutting greens, gathering peas and beans and picking small fruits. This out-of-door work we have found most beneficial and we hope to extend it in the near future.

All patients not paroled, employed in the laundry or shops work half a day only, thus having time for out-of-door recreation.

Our pupil nurses receive industrial instruction as part of their school course.

Here, if you will pardon me, I will introduce a few very dry facts to illustrate about how our work is distributed. Take, for instance, October, 1912, this month being selected as a good average month for all industries.

During this month out of a total number of 1105 patients, 600 men and 505 women, 769—415 men and 354 women, or 69½ per cent—were in some way employed. Of these, 233—136 men and 97 women—were employed assisting the nurses at ward work, 88—35 men and 53 women—were employed in the different dining rooms, 5—2 men and 3 women—in the nurses' home, 30

—18 men and 12 women—in the kitchen, 71—43 men and 28 women—in the laundry, 115 men on the farm and grounds, 14 men in the shoe shop, 16 men in the tailor shop, 3 men in the mattress shop, 7 men in the broom and repair shops, 6 men with the engineer, 1 man with the mason, 3 men with the painter, 1 man in the laboratory, 4 men in the store-room, 5 men in the bake shop, 2 men in the library, containing about 3000 volumes, they taking entire charge of same, 2 men marking clothes, 117 women sewing, 8 women lace making, 10 women at raffia work and basket making, 10 women knitting, and quite a number working at various unclassified occupations.

The accompanying tables show how the labor of patients has been distributed during the year ending September 30, 1912, and also the number of some of the most important articles produced during that period.

We have found employment beneficial in a great majority of cases, and especially in those suffering from the more curable forms of insanity. Take that large group called, for lack of a better name, manic-depressive insanity. Those suffering from manic symptoms are over-active mentally and physically and have a great superabundance of energy. If, after the most active symptoms have subsided, suitable employment is provided to direct their activity and energy along normal channels, speedy convalescence and an early recovery is often promoted, while if employment is not provided this activity and energy is too often directed into mischievous and perverted channels and convalescence correspondingly retarded.

Patients suffering from depressive symptoms present a feature diametrically opposite. Instead of exhilaration, activity and energy, we have depression, inactivity and lethargy. The patient needs to be stimulated and interested in something outside himself to counteract his morbid introspection and apprehension, and for this purpose nothing is better than suitable employment. Convalescence often dates from the time when employment begins.

Cases of neurasthenia are markedly benefited by employment, in spite of the fact that only aggravated cases are committed to hospitals. I have in mind a case that illustrates this point. This patient had lain in bed for five years, nursing a most uncomfortable bunch of hypochondriacal delusions. By continual and

NUMBER OF WORKING PATIENTS PER MONTH FROM OCTOBER 1, 1911, TO OCTOBER 1, 1912.

	October.		November.		December.		January.		February.		March.		April.		May.		June.		July.		August.		September.										
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.									
Farm and grounds	87	..	85	85	79	..	72	..	69	69	76	..	83	..	84	..	98	8	106	75	29	104	88	34	122	90	..	90	24	78			
Laundry	41	23	39	62	38	26	64	41	24	65	42	27	66	44	25	69	43	68	43	21	64	33	14	47	54	40	19	15	34				
Kitchen	18	13	17	13	17	16	33	17	14	32	13	20	14	13	27	17	34	17	15	18	14	32	17	23	40	19	15	34					
Sewing	..	117	..	117	..	66	96	..	80	89	..	105	105	..	100	100	..	128	138	..	120	160	..	160	160	..	130	130					
Ward work	111	98	122	98	122	73	105	111	78	189	123	81	102	122	72	194	139	56	195	145	81	232	147	84	231	133	91	224					
Dining rooms	39	25	64	47	25	38	74	40	30	70	41	34	75	30	37	67	45	36	81	43	40	93	37	45	82	42	47	89					
Nurses' homes	3	3	6	3	3	4	12	14	3	6	3	3	4	14	12	7	3	4	7	3	4	7	3	4	14	14	3	5	14				
Shoe shop	12	12	14	..	16	16	15	..	15	16	..	16	16	..	10	19	15	15	15	12	20	14	..	15	15	..	25	..	25				
Tailor shop	13	..	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mattress shop	5	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carpet shop	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Repair and broom shop	3	..	3	..	6	..	8	..	10	..	9	..	10	..	9	..	10	9	9	9	9	5	..	5	4	..	4	..	4				
Paint shop	21	..	25	..	18	..	30	..	17	..	18	..	10	..	11	..	9	8	8	4	4	17	..	17	3	..	3	..	3				
Bake shop	4	..	3	..	4	..	4	..	4	..	4	..	5	..	5	..	4	4	4	4	4	5	..	5	5	..	5	..	5				
Boiler house	8	..	8	..	7	..	7	..	7	..	7	..	10	..	8	..	8	8	8	8	8	7	..	7	1	..	1	..	1				
Masons	2	..	2	..	2	..	3	..	2	..	2	..	2	..	1	..	1	1	1	1	1	1	..	1	1	..	1	..	1				
Store room	4	..	5	..	5	..	5	..	4	..	4	..	4	..	4	..	4	4	4	4	4	5	..	5	5	..	5	..	5				
Raffia and basketry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lace making	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Laboratory	1	..	1	..	2	..	1	..	1	..	1	..	1	..	1	..	1	1	1	1	1	1	..	1	1	..	1	..	1				
Office	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	1	1	1	1	1	..	1	1	..	1	..	1				
With porter	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	1	1	1	1	1	..	1	1	..	1	..	1				
With matron	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	1	1	1	1	1	..	1	1	..	1	..	1				
Library	2	..	2	..	2	..	2	..	2	..	2	..	2	..	2	..	2	2	2	2	2	2	..	2	2	..	2	..	2				
Marking room	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	..	1	1	1	1	1	1	..	1	1	..	1	..	1				
Knitting	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Picking hair	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ravelling	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	377	280	657	399	281	680	378	269	647	388	289	677	366	290	656	401	268	669	418	291	709	402	280	682	415	299	714	405	352	757	414	329	743
No. under treatment	533	451	984	525	458	983	538	453	991	536	464	1000	551	468	1019	561	473	1034	571	479	1056	574	497	1071	587	505	1092	594	512	1106	597	506	1103
Percentage employed	71	62	66	76	61	69	70	63	67	72	62	67	66	62	64	71	59	65	73	61	67	70	60	65	71	59	65	68	68	70	65	68	

persistent effort she was induced to employ herself, and, in consequence, became sufficiently restored to get along outside and to be at least partially self-supporting.

In the less curable group of cases, like chronic alcoholism and dementia præcox, in which recoveries are few, remissions are not infrequent, and many cases are permanently arrested. We have found employment to be one of the most efficient agents to promote these results.

PART OF WORK DONE BY PATIENTS AT THE TAUNTON
STATE HOSPITAL FROM OCT. 1, 1911, TO OCT. 1, 1912.

Manufactured.		Repaired.
1029 Corn brooms,	682 Shirts,	2767 Pairs shoes.
118 Finger-nail brushes,	66 Bosom shirts,	7176 Pairs socks,
252 Scrub brushes,	415 Nurses aprons,	351 Mattress ticks,
77 Horse brushes,	433 Nurses apron bibs,	731 Wrappers,
24 Braided door mats,	1248 Aprons,	667 Undershirts,
326 Pairs shoes,	10031 Towels,	464 Pairs drawers,
335 Pairs slippers,	1104 Hair mattresses,	460 Shirts,
421 Pairs moccasins,	933 Hair pillows,	4990 Coats, repaired
3589 Sheets,	418 Coats,	and pressed,
1553 Draw sheets,	154 Vests,	3372 Vests, repaired
4027 Pillow slips,	571 Pairs pants,	and pressed,
576 Wrappers,	100 Pairs overalls,	7265 Pairs pants, re-
784 Nightdresses,	10 Rugs, nooked,	paired & pressed,
987 Skirts,	199 Laundry bags,	675 Chairs, repaired,
206 Wool puffs,	264 Screen covers.	scraped & varn.

We have at the present time many cases of chronic alcoholism and dementia præcox that have remained stationary for years, where in our opinion, further degeneration has been prevented by steady, congenial occupation. Even in the group of least-curable disorders, many cases are found that are rendered more comfortable by suitable employment.

Many demented patients are markedly benefited and rendered more comfortable. Many of these patients who, from sheer indifference and lack of energy acquire untidy and pernicious habits, by employment are rendered fairly tractable and tidy, more comfortable, and further degeneration is checked to a greater or less extent.

One of our wards devoted principally to the care of the more appreciative class of chronic women patients, by a combination

of circumstances had become so steeped in idleness and apathy that the very atmosphere seemed leaden and lethargic. So marked was this condition that we did not dare, as a rule, to put a convalescent on that ward, lest her convalescence be retarded. Recognizing that the condition was pernicious and to be corrected, by persistent and continued effort we succeeded in inducing the great majority of the patients to employ themselves to some extent, the result being that, as the result of our year's work, the atmosphere of the ward completely changed, the patients became more cheerful and contented, less fretful and fault-finding, and instead of being drones, they contributed largely to the work of the community.

Another ward occupied by a like class of men was in a similar condition; and now every patient pursues some occupation, and it is a favorite ward on which to care for convalescent patients.

Patients suffering from acute delusions and hallucinations are markedly benefited by occupation. We have many such under treatment at the present time. One patient especially sat all day on the ward completely absorbed in and controlled by hallucinations until he was induced to try and work at his trade—making baskets. Beginning rather hesitatingly, he soon became interested, and in a few weeks established a new industry to the benefit of the hospital, with the result to himself that his hallucinations became nearly dormant and he was once more able to enjoy living. In this instance greater obstacles than usual were overcome, as it was necessary for him to make most of his tools and select and fell the timber from which to make his basket stock, as we were unable to buy any prepared stock. In the doing it, however, he derived the greatest mental benefit.

In thus presenting a review of our experience in the employment of patients as a remedial agent in the treatment of mental disease, we would not have you infer that we feel that we have accomplished great things, for we realize that we have only made a beginning, but our experience has convinced us that employment is a most valuable remedial agent, and that any one who fails to avail himself of it is losing the help of a most valuable means of treatment.

THE CONGREGATE DINING-ROOM AND ITS MANAGEMENT.

By ARTHUR H. HARRINGTON, M. D., HOWARD, RHODE ISLAND.

At the annual meeting of this association in 1895 a paper was read by Dr. Charles W. Pilgrim, entitled "The Dietary of the New York State Hospitals." In the closing paragraphs of this paper Dr. Pilgrim made an illusion to the congregate dining-room in connection with hospitals for the insane.

The apparently somewhat incidental mention of the congregate dining-room in this paper caused the greater part of the discussion which followed to center around the congregate dining-room. Those participants in the discussion who condemned the congregate dining-room were very largely in the majority. Whether the congregate dining-room has grown in favor since that discussion eighteen years ago it is not the purpose of this paper to attempt to determine. I do not start out with the fixed purpose of holding a brief for the congregate dining-room. What I do say, at the very opening of this subject, is that the congregate dining-room may easily be a dismal failure if it is not properly managed. I believe that the lack of a proper appreciation of certain essentials of the congregate dining-room and a failure to apply certain principles in its conduct are the causes of the condemnation of the congregate dining-room which we have often heard.

With the recognition and adoption of certain essentials and principles, I believe that the congregate dining-room may be made a feature which will have a distinct advantage, both from the managerial standpoint and from the standpoint of benefit to the patients in large hospitals for the insane.

When I speak of large hospitals I mean those having approximately one thousand patients and over. When I refer to the large congregate dining-room I mean one accommodating approximately five hundred patients and over. The maximum limit of accommodation I do not consider it necessary to fix, for under the system which I shall describe a dining-room accommodating two

thousand, in my opinion, can be managed just as satisfactory as one of five hundred.

The character of the patients may differ somewhat in different sections of our country, but I think that as a rule from 50 to 60 per cent of all patients in the large hospitals for the insane can be properly treated in the congregate dining-room.

When I say treated I am using that term advisedly, for the congregate dining-room, from first to last, should be employed as a therapeutic measure and not as a mere means for the collecting of patients in order to furnish them with the requisite number of food calories.

The first cardinal principle, therefore, to be kept in mind is to aim at therapeutic value in the conduct of the congregate-dining room. The second cardinal principle which I enunciate is that there should be an application of efficiency methods to every operation connected with the serving of meals.

I wish to say here that I do not claim originality for everything which I present. When I succeeded to the superintendency of the Danvers State Hospital in 1898 I found that my predecessor, Dr. Charles W. Page, had established there a congregate dining-room having the general features to which I have alluded. In 1904, under the administration of the late Dr. George F. Keene, there was completed at the State Hospital for the Insane at Howard, R. I., following the general features of the congregate-dining-hall at Danvers, a dining-hall building of excellent architectural design. Since succeeding to the superintendency of the State Hospital for the insane at Howard I have given much thought and experiment to the management of the congregate dining-room, and what I shall have to offer now is drawn from my experience, observation and personal contact with the work of conducting a large congregate dining-room.

Let us inquire now how this therapeutic value, of which I speak, can be obtained. First, the architectural feature should be given prominent consideration. I believe that the best result is obtained by creating for the dining-room space a separate building of one floor, built practically upon the ground level at the center of the plant, with only the basement under it. The space should have generous height, thus affording means for making ample provision for light and ventilation, two very important considerations

when we remember that 500 or more persons are to occupy the hall for a considerable space of time. Opening out of the rear of this hall there should be the main serving room, containing tea and coffee urns and dish-washing machines for the table dishes, and beyond this the main kitchen and the bakery of the institution.

A study should be made of the internal construction and decoration of the hall, in order to avoid a cold and barren effect. This can be done by breaking up space by means of columns and brackets supporting the roof, one or both. If the brackets and roof or ceiling timbers are of wood, a pleasing effect may be produced by a natural finish, the spaces between the ceiling timbers being plastered, and the walls and ceilings painted with appropriate colors. Decoration by means of natural or artificial plants should not be overlooked. A stage or platform should be provided for a small orchestra, which should play through the entire meal. A space should be provided for visitors, which can be done by means of a gallery at one end of the dining-room. Entertainments can be given from the stage, either during the meal or immediately after, the patients not leaving their places.

The contrast between such surroundings and accompaniments as I have described and a congregate dining-room, where no attention has been paid to these matters, is very wide. What has been done in the first instance is that an appeal has been made to the aesthetic sense, which as we all know, is not by any means dormant in the great majority of our patients; in the second instance that appeal has been wholly neglected. The result, in the first instance, is that we bring a wholesome psychic factor into the daily life of the patients, and from this I am assured, from my observation, that we derive a therapeutic value. This is what I mean when I speak of conducting the large congregate dining-room in such manner as to make of it a therapeutic measure.

We come now to the consideration of efficiency as applied to the various operations of the serving of meals. This requires that nurses and attendants shall be instructed and drilled in their work; that one thing shall be done at a time and at the same time throughout the hall; that the same order be followed out each day; that every stage of the meal shall begin and end at the same time; that there shall be no hurrying; that various ways

shall be devised for cutting out the unnecessary handling of food between the cooking apparatus and the patient; that all hot foods shall be kept in bulk, as far as possible, up to the moment of delivery to the patient.

With these statements I will give a brief description of the congregate dining-hall at the State Hospital for the Insane at Howard, and I will also describe the progress of the meal served at the dinner hour.

The floor space of that portion of the hall where patients are seated is 146 feet by 100 feet. The seating capacity is 896, which is giving each person a little over 16 square feet. Opening at one end of this dining-room is the main serving room, and connected with this serving room by corridor are the kitchen and bakery. Over the serving room space is a gallery for visitors, which can easily seat 150 people. At the opposite end of the hall from the serving room is the stage, where the musicians are seated and play during the meals. This stage is, moreover, large enough to accommodate a large chorus of singers or a full band or orchestra. At the outside wall the distance from floor to ceiling is 22 feet. For a distance of 25 feet from the wall on each side of the hall the roof slopes upwards and 25 feet from the side walls the height from the floor to ceiling is 28 feet. Twenty-five feet from the side walls on each side, lengthwise of the hall, are seven iron supporting columns. Widthwise of the hall the distance between these columns is 50 feet. Running the whole length of the hall for a space 50 feet wide the roof is of the monitor type, having transom windows which are operated in four sections from a worm gear, which is easily within the reach of a person standing on the floor. The distance from floor to ceiling throughout the central portion of the hall is 39 feet. The windows upon the side walls are large openings and they, together with the transoms, afford a very light room, which can be easily ventilated. Running the whole length of the hall on the side walls is a slate shelf two feet in width, which serves as a sideboard. The building is warmed by direct-indirect radiation, the coils being in iron boxes just under the slate shelves. These iron boxes have grill work a few inches down from the top on the front and sides. Wherever these boxes occur the slate shelf over the coils becomes sufficiently hot, so that the table crockery, being placed there

between meals, is warmed for the coming meal. The walls of the hall are painted in terra cotta and the ceilings in a light tan. Each column has a circular shelf extending around it, which is at a distance of $9\frac{1}{2}$ feet from the floor. This shelf is 20 inches wide and serves as a place for potted ferns, which add much to the decorative effect of the hall.

The patients' tables are 16 feet by 4 feet. Each table seats 16 people. One line of tables is 6 feet from the sideboard, crosswise of the hall; next is an aisle 4 feet in width; next another row of tables. This, we will say, is the woman's side of the house. Then comes a broad aisle 12 feet wide and the same arrangement exists on the opposite side of the hall. The unit upon which we do all of our serving is 32. Two tables extending crosswise of the hall seating 32 patients constitute one unit. The food for this unit is brought into the dining-room on the food cars, just before the patients enter the hall, in boxes and various utensils, all hot foods being kept in bulk.

In order to illustrate one of the means by which we diminish the handling of foods, I will speak of the method of cooking and serving steamed potatoes. There is a perforated galvanized iron box which will hold sufficient potatoes for 32 people. This holder is put into the vegetable steamer and just before the dinner hour the box is removed from the steamer, the potatoes not being disturbed, and the box is then carried to the sideboard and the only handling of the potato in serving is when it is being placed upon the patient's plate.

For the handling of the butter on the butter chips we have a wire butter rack of four shelves. Each shelf will hold a wire tray upon which we place 20 butter chips, so that the whole rack will accommodate 80 butter chips. This rack has a handle by which it can be easily carried. Before the meal this rack is placed upon a second shelf, which is below the slate shelf sideboard above described. From the wire trays which rest in the butter rack the butter chips, with butter already on them, are distributed to the patients during the meal at the appropriate time. Another utensil is a wire rack holding 16 dessert saucers. This has a handle by which it is easily carried and at the appropriate time the desserts are distributed from this rack to the patients.

The signals for the separate steps which take place during the meal are announced by the playing of a tubular chime, on which the first, third and fifth notes of the scale are sounded.

One principle which is observed strictly is that not a morsel of food is placed upon the tables prior to the patients being seated at the tables. The only articles upon the tables when the patients come to the dining-hall are the cup and saucer and drinking glass.

We come now to a detailed description of a meal, we will say the dinner hour. At 11.25 a. m. the signal is played upon the tubular chimes. This signal is for the orchestra, which then begins to play. As soon as the music begins the patients enter at four different doors and file to their places at the tables. This process takes five minutes. As soon as the last patient is seated and the dining-room is quiet, the music having ceased, the second signal is played. This is a signal for the distributing of the knives, forks and spoons to the patients, the nurse or attendant having previously stationed herself or himself at the sideboard end of the tables of each group of 32 patients. On the signal the nurse distributes to the patients, from the box containing the silver, utensils which are to be used for the meal; placing, for instance, one knife, one fork and one spoon at the right hand of each patient. At the signal for the distribution of the silver the orchestra immediately begins playing and ceases again as soon as the silver is distributed. From this time on throughout the meal the orchestra renders various selections without any further reference to the signals.

We will now take a single group of 32 people and describe the serving of this group, bearing in mind that the same process is being carried out at the same time with every other group of 32 people in the dining-room.

As soon as the silver has been distributed, the signal sounds again. On this announcement the nurse turns to the sideboard, where there have already been placed the meat course or whatever it may be and the vegetables. She uncovers the food boxes and begins placing upon the plates which are already at hand on the sideboard the portion of meat, the potato and the vegetables. At the same time two patients from each group of 32 persons who are appointed as assistants to help the nurse, rise from their places

at the table and taking one plate in each hand distribute them, as fast as the nurse fills the plates, to the group of 32 patients, thus each patient makes eight trips. The two patients then place their own plates at their places at the table and resume their seats and eat their dinner at the same time with the other patients. This operation of serving the meat and vegetable courses occupies five or six minutes. Without any further signals the nurse then goes to the bread tables, which are ranged in the broad center aisle, and distributes six plates of bread, usually with ten slices on each plate, to her group of 32 patients. She then takes a tray from the butter rack and distributes the butter chips, which, as I have already indicated, have had the butter distributed on them some time before the meal begins by the regular employees, who are occupied in the serving room. The nurse then pours into the glasses water from pitchers which are on hand on the sideboard and then leaves two filled pitchers on each table, in order that the patients may further help themselves. Tea is sometimes served at the dinner hour. The nurse in that case passes around, filling the cups from a pitcher. There is always sufficient food, so that in case patients wish for a second helping they can have it.

Up to this point 25 minutes have been consumed from the time the signal was given for the entering of the patients, and it is now 11.40. At this time another signal is played and upon this the attendants and nurses, with the exception of four supervisors and six attendants, go to their own tables in order to eat their dinners. Four tables at the present time are reserved at the end of the dining room nearest the main serving room for employees. The time which these nurses and attendants have for their dinner is 25 minutes and during all this time the supervisors and those nurses and attendants who have been left on the floor are overseeing the patients and attending to their wants.

If a hot dessert is to be served the employees in the main serving room, assisted by certain patients, will have begun at 11.30 to distribute this dessert into the dessert saucers, the dessert saucers being then placed in the dessert rack, above described. All these dessert racks, having been placed upon the food cars, are taken to the dining-room at 11.55 and two racks are placed on the slate sideboard at the end of each group of 32 people. At

12 o'clock a signal sounds and the two patients from each unit of 32, who in the first instance assisted the nurse in distributing the main course, go to the sideboard, each taking one rack and distributing 16 saucers from it to 16 places at the table. This latter process of distributing the saucers occupies usually less than a minute and a half. At 12.15 the signal which sounds is the call for the nurses and attendants, who have been eating their dinners, to return to their places at the patients' tables. As soon as they have all reached their places, the orchestra having ceased playing, another signal is sounded which is the signal for the collecting of the silver. The orchestra during this process begins again playing appropriate music. In the picking up of the silver the patients are trained to place their knives, forks and spoons at their right hand and the attendants are instructed to pick up from the right hand of each patient the same number of utensils which were originally given out. In this way, knives, forks, and spoons are checked up. If anything is found missing the fact is reported at once to the supervisor, who takes the necessary steps to find the missing articles. At 12.20 a signal is played which is the signal for the patients to leave the hall. Each table is dismissed by a supervisor in order and the patients file out in the same manner in which they entered. I should have stated that the patients, in entering and leaving the hall, do not file out in close or in any regular marching order.

I will say a word here about the character and quality of the music which is rendered during the meal. While the patients are entering and leaving the hall it is customary to play marches, during the distribution and collecting of the silver the music is of a lively and forte character. During the remainder of the meal the instructions to the orchestra are that compositions without marked time shall be played and as the meal progresses the instructions are that the music shall gradually become more quiet. The reason for this is that as a meal progresses the sounds which arise from the handling of the plates and the use of the knives and forks by patients gradually diminish. It is desirable at all times not to have the music of an obtrusive character, but that it shall furnish rather the effect of a quiet undertone of musical sounds. I think it is this effect that should be striven for. If music of a lively nature or of a marked time is being played,

I have observed that patients are apt to beat time to the music with their feet or with their knives or forks, while subdued music seems to me to have a tranquilizing effect upon the patients. Usually at the latter portion of our meals, we will say after the desserts have been given out, the hall will be perfectly quiet, as far as any sound occasioned by patients is concerned.

To those who have an acquaintance with musical compositions the following sample program will indicate the sort of music which I think should be rendered during a meal.

PROGRAM FOR THURSDAY NOON—MAY 22, 1913.

1. March, "Prince of India".....Farrand.
2. Distribution of Silver, "Silver Bell".....Wenrich
3. Selection from "Lohengrin".....Wagner
4. ValseChopin
5. Paraphrase, Melody in F.....Rubinstein.
6. Collection of Silver, "Silver Bell".....Wenrich
7. March, "Dallas"Hall.

In regard to the orchestra, I think that care should be taken that this is not too large. From four to six pieces, aside from the piano, are sufficient.

In regard to the furnishing of entertainments during or immediately after meals, I will say that I have frequently been able to obtain professional singers to sing from the stage during the meal and I have had our hospital choir, consisting of thirty voices, render Christmas carols and music appropriate to other holiday seasons of the year. After a meal has been finished I have on occasions had an entertainment lasting for an hour's time given from the stage. The patients in that case who were seated back to the stage turning their seats toward it. On such an occasion patients who do not eat regularly in the dining-room, as for instance some of the more feeble and certain disturbed patients, are brought to the dining-hall and seated in the broad aisle, and in this way we can furnish entertainment for 1000 or more of our patients at one time.

By the method of serving which I have described efficiency, order and precision are arrived at; the food reaches the patient steaming hot and one hour is given to the dinner meal.

If I have made this description clear I think it will be seen that it is immaterial how many units of patients we have, pro-

vided we have the proper arrangement for the care of each unit. In regard to the size of the unit, I would say that this can be 20-24-28 or 32 within practical limits. If smaller or larger units should be used a disadvantage would arise. In my opinion a group should not be less than 20 because the food will be distributed in too small amounts to retain its heat and the smaller the unit the larger number of units which you will have to have. If the units are larger than 32, the amount of food for the units becomes too bulky to handle properly.

I wish to contrast this picture with one in which the patients enter a hall without surroundings which have been made attractive, where the food has been placed on the tables before the patients enter the dining-hall. In this last instance you will observe for one thing that the patient who is the first to seat himself has finished his meal before the last patient has reached his place.

If you go into most of our hospitals for the insane you will find that the small ward dining-rooms have been rendered attractive by the furnishings and decorations and flowers, but oftentimes, where congregate dining-rooms have been established, I think it has been the case that the asthetic side has been strangely forgotten. I think that the greater part of the mistakes which have been made in conducting large congregate dining-rooms rise through improper methods of serving food.

I think that attention given to the propositions which I have set forth, namely: the making of the large congregate dining-room a therapeutic measure and the adoption of methods of efficiency in the serving of food, will make all the difference between condemnation and approval of the congregate dining-room, on the part of officials, employees and the patients themselves.

SOME SUGGESTIONS REGARDING THE IMPROVEMENT OF THE MEDICAL SERVICE AND THE CARE AND TREATMENT OF THE INSANE.

BY WALTER G. RYON, M. D.,

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Prior to the advent of the newer psychiatry in this country the medical work, in the large number of our public institutions, was more or less of a stereotyped character; the histories were meager in outline, and the scientific work at a low ebb. The hospitals were, in other words, institutions more for custodial care than for scientific purposes.

In the past decade the medical work has made more rapid advances. In a few states psychiatric institutes have been established, affording governing centers for the scientific work of the institutions under their direction. Such institutes should be established in all states. It is only by having such central institutes as these that the medical work can be at all systematized and the most uniform and best scientific results obtained. Here the various physicians of the public hospitals and also of the private sanatoria can be instructed in clinical psychiatry and neuro-pathology and returning to their respective institutions, instruct their colleagues on the staff, thereby increasing the efficiency of all. It would be most fortunate if all the new men entering the medical service of our hospitals could have their first service at such institutes, thereby fitting themselves at once for thorough and scientific work.

The establishment of courses in clinical psychiatry and neuro-pathology, the holding of inter-hospital conferences, the conduction of daily staff meetings and the organization of local psychiatric societies and clinics, have all given an impetus to the work which had not heretofore been attained.

Notwithstanding this, it is still true that, upon the part of some, there exists a tendency to perform the required work in a more or less mechanical and superficial way, with a laxity of purpose that should be corrected.

These faults may be met and overcome by the appointment in each hospital of men who will act as directors of clinical psychiatry, the remuneration to be that of a first assistant physician in the larger institutions, while in those of a smaller type the designation of a senior assistant physician would suffice. It should be the duty of these men to supervise and direct the clinical work of the hospital, with the object in view of obtaining the most complete and scientific results. These officers should be selected by the superintendent, with the approval of the directors of the various psychiatric institutes, and of the commissions or boards of control whose duty it is to administer and supervise the institutions for the care of the insane.

These physicians should be held entirely responsible to the superintendent for the proper conduct of the medical and scientific work in their respective institutions. They should conduct the staff meetings, review the clinical work from day to day and see that the highest possible standard of efficiency is maintained. On the other hand, these men should be afforded every advantage possible, by courses at the various psychiatric institutes and elsewhere, and the command of all necessary literature, to not only fit themselves for this work, but to enable them to instruct their associates.

In a similar manner there should be designated in each hospital a senior assistant physician, who should act as the pathologist of the hospital. These men should avail themselves of the advantages of the institute, and keep in touch with the work in progress there, not only in order to learn new methods of technique, but to acquaint the director of the institute with the work in progress in their respective hospitals. The pathologist in addition to performing all of the autopsies at his institution, and subsequently working up the material, should himself prepare the clinical history of the case, which should be presented by him, in conjunction with his autopsy report, at the pathological staff meeting. In this way errors of diagnosis and discrepancies and omissions in the record would be more fully brought out. Possibly no one would enjoy the criticisms that such a method might bring forth, but nevertheless such criticism would result in more careful methods and an increase in efficiency upon the part of the medical staff.

The examination and study of new patients admitted should largely be centered upon the reception services, which should be in charge of senior assistants who have been trained in clinical psychiatry, and arrangements be made so that all will have an opportunity to work with them.

In the enthusiasm developed by the study of the acute mental cases the chronic patients should not be overlooked. Here exists also a great opportunity for study. The physician on a chronic service, who segregates and makes an intensive study of his organic cases, accomplishes quite as much for the cause of science as does the physician working only on an acute receiving service. This fact is often forgotten by those who complain of not being able to work on an acute service.

A closer relationship should exist between the hospital and the surrounding community. In the past it has been the custom of some hospitals to invite the attendance at staff meetings of the general practitioners of the district, sending word to those who are particularly interested in the patients to be presented, either by reason of being one of the medical examiners or the family physician. This practice should be encouraged by all institutions, as it not only enables the hospital to obtain a more complete history of the patient, but enables the medical profession to familiarize themselves with the methods of examination and the standard of care maintained in the public hospitals for the insane.

This relationship can be further augmented by the medical officers themselves by attending the meetings of the various local medical societies, and, by the presentation of cases and the preparation of papers to be read at these meetings, give the medical profession the benefit of their experience and special training.

Another duty evolves itself upon the medical officers of our hospitals and private institutions. Much good work can be done by them along the lines of prevention and mental hygiene. Public meetings, at which the preventable causes of insanity are discussed, should be conducted by them, and every effort made to demonstrate to the public the means of eliminating the preventable causes of mental disease. At such a time, by the exhibition of moving pictures, photographs, various charts, industrial products of the hospital, and demonstrations in practical nursing, the work of our public hospitals can be shown and the general

public enlightened as to the uses and needs of these institutions. Such work would be of lasting benefit, not only to the public, but, from an economic standpoint, to the state as well.

The hospital may further increase its usefulness by the establishment of out-door clinics. Certain hours should be designated, and a day set apart, when the medical staff can be assigned to this work. This would enable those in the community, who so desire, to come to the hospital for advice and treatment, thus affording the hospital to reach many in the incipient stage of their mental or nervous trouble, when most benefit will accrue from treatment. The treating of these cases should be entered into with the family physician, thus encouraging him to look upon the hospital physicians as colleagues to whom he may feel free to turn for advice and guidance. In New York state three such clinics have been established in connection with the state hospitals, and have met with unqualified success.

A closer relationship should be maintained between the commissions, boards of control and the state hospitals on the one hand, and the private licensed institutions on the other. Physicians in charge of these sanatoria and their associates should feel free to attend the inter-hospital conferences, to visit the various psychiatric institutes and the state hospitals, and thus familiarize themselves with the work that is being done. In this way the standard of care in these institutions could be improved, and the medical work put upon a higher scientific plane than now exists. All are interested in the same special work; all hope for the best results, and therefore all should work together for the best standards.

Not only have the medical standards of the hospitals improved during recent years, but there has been an equal advance in the methods of treatment. At the present time practically all of our hospitals and a large number of private sanatoria are fully equipped along hydrotherapeutic lines, and the former harsh methods of restraint by the means of drugs and various kinds of apparatus have, in the main, given way to the use of the hot and cold pack and the continuous bath.

Occupation as a form of treatment has been in vogue for many years, but has been limited chiefly to patients who could employ themselves intelligently in the various industrial departments

of the hospital or about the farm and grounds. It is only within comparatively few years that systematic work has been done in the matter of the reeducation of patients, not only with a view of arresting deterioration, but to improve the habits of those already demented. Along this line much has been accomplished, yet there still remains much to be done.

In many of the hospitals there is but little interest taken in this matter. It is often hard to make the medical staff see the necessity and the great importance of this work. One hears upon all sides the cry "I have not the time to devote to this matter, because of my ever increasing duties." This we will remember was the same complaint that was offered long ago when newer methods in clinical psychiatry were introduced, yet that work has been undertaken successfully. Now this work is so important that all should undertake it. In each state hospital and private licensed institution there should be employed competent teachers for this work, to instruct not only kindergarten methods for the more deteriorated, but basketry, raffia work, embroidery, flower-making, arts and crafts, etc., for those who can undertake the same. In addition to these, patients should be instructed in calisthenics, gymnastic exercises, folk dancing and games of various nature, thereby improving sluggish bodily functions as well as stimulating sluggish mental processes.

Such instruction should preferably be given upon the wards of a hospital, rather than in one central place, in order to attract the attention of idle patients, and stimulate them to take part. The keynote of success in this work is individual attention, and if carried out systematically will eventually free our wards of the undesirable untidy class, brighten the environment and stimulate the interest of the more chronic cases, and hasten the recovery and discharge of the recoverable patients.

It would seem amiss, if, before concluding this paper, no mention were made of the care of the insane pending commitment. In the majority of the states the insane pending commitment are looked after by the poor authorities, either in almshouses, jails or at home. In recent years New York state has enacted a statute which compels the health officers of the state, outside of the county of Albany and the City of New York, to maintain the insane pending commitment in a safe and comfortable place, and to provide them with proper nursing and attention, the expense

incurred being a charge upon the county. This is a step in the right direction, but even with this precaution during the fiscal year ending September 30, 1912, two hundred and twenty patients were admitted directly to the state hospitals from jails and lock-ups, and in many instances, as shown by the hospital reports, patients were found in hospitals, sanitariums and at home in various forms of restraint and in deplorable conditions.

It is indeed fitting that a medical officer should have the oversight of this important matter, but there should also be in each state an arrangement whereby each county should provide and be required to maintain, preferably in connection with a general hospital, a suitable pavilion for the detention, care and treatment of the insane pending commitment. These pavilions should be subject to the visitation and inspection of the commissions or boards of control governing the care of the insane in the various states, or their representatives, and should be governed by rules and regulations formulated by them.

The nurses employed at such pavilions should only be those who have had experience with the committed insane, and the supervising nurse should preferably be a graduate of a state hospital training school. Should such a pavilion be large enough to require the services of a resident physician, he should be one who has had at least three years' experience in a state hospital for the insane.

Meetings of such resident officers and the health officers should be held at the various hospitals within the state, where they would have the benefit of observing the modern methods of the care of the insane, and where they could witness practical demonstrations in the handling of violent patients, forcible feeding, and hydrotherapeutic measures.

Such a scheme may strike many of you as being of a Utopian character, but it is at least practical and could be promulgated by the proper legislation. Let us therefore all unite our efforts to further this end, that existing conditions may be improved and that places be provided throughout our states where not only incipient cases of insanity may receive early and beneficial treatment, thus in many instances avoiding hospital care, but that the insane awaiting formal commitment may receive the care so necessary to prevent an aggravation of their existing mental trouble.

DISCUSSION OF PAPER BY DR. MAY.

DR. HENRY M. HURD.—I am sorry Dr. May did not finish reading his paper, because I hoped he was going to present some systematic method by which we could utilize these statistics. Of course, figures cannot be carried into practice. Patients are classified in many instances according to the individual preference of the man who happens to be reading the statistics. I am sorry to say that the American people are an imitative people. When in some leading institutions certain forms of disease are discovered immediately every institution throughout the country discovers the same disease; when another light appears in two or three years and makes a specialty of another form of disease, in a short season we have a crop of the new form. I remember when paranoia was first heard of we had all sorts of statistics about it and many supposed recoveries. Now other forms of disease take the place of this and we continue to wander along in similar uncertain ways. I do not think that it is possible for us to have a uniform classification of patients so that we may compare one institution with another or one state with another. Perhaps I ought to add, for the comfort of members of this Association, that our statistics are not worse than those of other allied institutions. Last winter I had occasion to talk with a prominent statistician about general hospital statistics, and I learned from him that only one hospital in the United States published statistics of the slightest value. I am inclined to think that until we acquire more knowledge and have a better conception of the disorders and conditions which we are comparing we are likely to continue to wander in the dark. I wish it were possible to secure a combined analysis of the insanity statistics of the whole United States. Within the last year I have been working industriously over them with confusing results. I am not prepared to make any recommendation at the present time as to the mode of dealing with them, but I call your attention to the fact that we are wandering aimlessly in the wilderness at the present time.

DR. SALMON.—The National Committee for Mental Hygiene has been carefully studying the reports of the institutions in different parts of the United States. Some of the methods employed in recording statistics are so inaccurate that it is impossible to tell the number of patients under treatment in the institutions in this country at a given time. An instance is the matter of reporting patients on parole. In some hospitals those patients are reported in the discharges and in others they are counted as present at the end of the fiscal year; so it is hard to tell which are discharged and which are paroled. In other reports there is no means of telling in what class paroled patients are carried. This is a simple matter, and we may look for still wider differences in clinical classifications and in

reporting admissions and readmissions. I think that there should be a uniform system of classification of at least the main facts. I think that a committee of this Association or of the National Committee for Mental Hygiene, or a committee representing both organizations, should be appointed to make a careful study of the matter and submit recommendations to this Association. It is impossible for us to look to the Census Bureau for any assistance, as the statistics it collects are compiled only once in ten years. It would be a very great help if we could only get a little better system of reporting the movement of population than we have at present. Better methods of reporting the psychoses treated, financial statements, etc., would follow.

DR. MACDONALD.—I regret that Dr. May was not permitted to extend the time limit a trifle and finish his interesting paper. During my experience as a member of the State Commission in Lunacy, and subsequently, I have had occasion to give not a little attention to the subject of statistics of the insane, and as a result of my study of the subject I have been forced to the conclusion that the statistics of institutions for the insane are unreliable and of little value. My conclusion is based on the fact that medical officers of hospitals for the insane differ widely on the questions of recovery, etiology, diagnosis as to forms, etc. For instance, one superintendent will regard a patient as recovered, while another will class him simply as improved. Also as regards the causes of insanity, we know as a matter of fact that one seldom finds a case that may be attributed to a single cause; in other words, there is substantially in every case a combination of causes, any one of which might be insufficient in itself to produce insanity, but, acting in conjunction with other causes, may be of very great importance. One observer will naturally attach more importance to one cause, whereas another may ignore that altogether and decide that the case is due to a different cause. For instance, if we take a case in which alcohol plays a prominent part, this may be put down as due entirely to alcohol, whereas a careful investigation of the history of the case may show that there are other conditions, such as syphilis, general ill health, mental worry, strain, etc., any or all of which may have contributed to produce the result. Again, many observers entertain widely different opinions as to the importance of heredity as compared with the importance of so-called exciting causes. For my own part, I have come to attach more and more importance to heredity and other predisposing causes, and less and less to exciting or immediate causes of mental disease. As a matter of fact, we rarely find an individual who has not at some period of his life been exposed more or less to so-called exciting causes without suffering a mental break-down. It is only when these so-called causes are superimposed upon a bad heredity or other predisposing causes that they become operative in an etiological sense. For the reasons I have stated I regard the statistics of hospitals for the insane upon these questions as of little or no value.

DISCUSSION OF PAPERS BY
DRS. BRIGGS, GOSS, RYON AND HARRINGTON.

DR. MACDONALD.—I would like to ask Dr. Harrington if provision is made for the presence of a medical officer during the meal time in the dining-room?

DR. HARRINGTON.—There is no medical officer required to be present at each meal; I leave it to my medical officers largely; they visit the dining-room frequently, and report is made to the medical officers of everything that occurs in the dining-room; that is, if the patients are in any way unruly, or in case any of the patients do not eat.

DR. BURGESS.—I want to thank Dr. Harrington for his interesting paper. At the same time I am absolutely opposed to congregate dining-rooms. I admit they are more economical, and perhaps may be of great value, but I would like to ask Dr. Harrington how does he segregate his patients in the congregate dining-room? Twenty-five years ago Dr. D. Hack Tuke, a great alienist, was very strong on congregate dining-rooms. I told him I thought they were absolute cruelty. I admit the economy, but claim that what I told Dr. Tuke is correct. I have had patients time and again beg of me, "For God's sake, don't send me to that congregate dining-room." How are you going to classify your patients in such rooms? There are certain patients who are ladies and gentlemen, even though public charges, and if they are seated opposite a man or woman who is not a lady or a gentleman; one who will jab his hands into his food and cram it into his mouth, while they will eat properly, how are these patients going to enjoy their meals? Personally I do not enjoy being seated beside a man who does not eat properly. How are you going to prevent a gentleman or a lady being placed opposite a man or woman who has no idea of proper table behavior? If Dr. Harrington will solve that point I will agree with him.

DR. EYMAN.—The patients are segregated in congregate dining-rooms the same as they are in the ward dining-rooms. There is no difficulty in placing the ladies and gentlemen by themselves and the riffraff by themselves in the congregate dining-room the same as in the ward dining-room. If a patient sticks his hand into the food it is the place of the nurse or supervisor to watch him, and if that patient is not fit for the congregae dining-room he is sent somewhere else. For twenty-nine years I have had to do with congregate dining-rooms. Twenty-five years ago I helped open a congregate dining-room at Toledo, O. Of course, there are disturbances during a meal, but there are many times disturbances in the ward dining-rooms. The thing that bothered me more than anything else in the ward dining-room system was the constant reports that the patients did not get enough food. In our institution at Massillon we have present at every meal a medical officer; also, there is a supervisor present at every meal in addition to the nurses. I think the service of meals can be made much more

DISCUSSION

satisfactory in the congregate dining-rooms than in the ward dining-rooms; the food can be served hotter and better. The supervision is much better; a patient who does not eat his food can be coaxed into eating by the medical officer, for there is always one present during the three meals. I often go into the dining-room; when there is a patient who is not eating I will place my arm around him and ask him if he is not going to eat and he will often readily acquiesce. I am a very great advocate of that system.

DR. BURGESS.—Why not make your hospital system one ward and turn all your patients loose into that ward, irrespective of class? If you are going to classify them according to their mental condition, why not classify them in your dining-room? I cannot see where the difference comes in.

DR. GILLIAM.—I am very much of the same view as Dr. Eyman. I cannot see myself why a person eating on the ward should refrain from sticking his hands into the food any more than in the congregate dining-room. I have a congregate dining-room that seats 1,000 people, and it is very rare that we have any trouble whatever. We require a physician to be present at every meal, in addition to the supervisors, both male and female, so there is constant supervision at all times to see to the proper behavior of the patients and that the attendants properly perform their duties in taking care of the dining-room in addition to enforcing discipline. Marching back and forth to the dining-room also gives exercise to the patients during the bad season of the year when it is impossible to go outside, which is very important. We have our patients classified and only those go in the dining-hall who we know will conduct themselves properly. When there is a patient who will not conduct himself properly he is sent to the dining-room on the wards. The patients fed on the wards are those who are not in condition to feed themselves properly in the congregate dining-room, or are unable to go on account of physical infirmity.

DR. E. H. HOWARD.—I would like to protest against the nurses eating at the same time that the patients do, in the same dining-room. This I am sure is an improper arrangement, both for the good of the patients and the nurses. A little more time taken for the meals would allow the nurses to have their meals by themselves, separately, and allow them to have more time to serve the patients more perfectly during their meal.

DR. GILLIAM.—The nurses and attendants do have their meals separately in our hospital.

DR. WOODSON.—While I like machinery and admire the working of it, I am opposed to having in the dining-room everything go by the clock. One patient may require ten minutes to eat, while another may require twenty, thirty, or even forty minutes. Patients suffering from agitated melancholia, from epilepsy, or the badly disturbed and untidy patients, or the manic-depressive forms, should not all be gathered in one dining-room. The chief characteristic of some of these forms of insanity is hesitation; they do not know whether to eat this or that, or whether to eat at all or

not. To my mind it is not best to have this regularity of passing dishes; one patient may be waiting, while another patient will not have eaten enough. I believe if men or women are unfortunate enough to become insane they are entitled to anything they want and they should be provided with what they want and when they want it. They regard me as a crank in the state of Missouri on this question. In the institution over which I preside we never put all the patients in the same dining-room—I do not believe it is home-like. I would rather sit at a table in the dining-room at a convention like this, with half a dozen congenial friends with me, than to attend a banquet where there were five hundred people, and I know I enjoy my meal better. I am a good eater and I believe I can establish that fact, but I want to eat quickly and get out, and if my associate wants to take more time I believe he should be allowed to do so.

THE PRESIDENT.—This eating question is always an interesting one to most of us, but do not let us take up too much time, for we have three other papers that have been read and are before you for discussion.

DR. FRENCH.—I was in hopes that Dr. Briggs in his plans for redistricting the Massachusetts institutions would advise the abolishment of classification of acute and chronic insane and make the institutions for the chronic insane receiving hospitals. I have had considerable experience in institutions of different classes and one of my strong objections to the plan of congregating the chronic insane together is that it destroys hope in the patients and also in their friends. A patient very soon translates the term "chronic" into incurable, and if he is a manic-depressive case he reasons that he has been transferred to an institution for incurables; therefore, there is no hope for him, and I know of several suicides that have resulted directly from that loss of hope; I believe it was because they were in institutions for incurables.

DR. STEDMAN.—I would simply like to emphasize a detail of the work at the Taunton State Hospital in the employment of patients there, and that is, how much advantage is gained from abandoning the sewing-room and having the work done entirely on the wards. As Dr. Ryon suggested, it stimulates the other patients to take part, who, before that time, would not have been selected to go into the sewing-room; it stimulates a large number of patients to take up the work on the wards, and we have adopted this plan.

In regard to Dr. Ryon's excellent paper, there is one other point I would like to mention, which he has touched upon, and that is the use of the institutions for instruction in psychiatry for the local practitioner. I do not mean simply inviting them to conferences, but to systematically hold the local district society meeting once a year at the state hospital. I know this is done spasmodically, but it has never, to my knowledge, been done systematically; if it could be done once a year, as we are trying to do at Taunton, it would be very advantageous. Not long ago we had a meeting which was largely attended by the local practitioners and the medical officers of the hospital. One of the trustees read a paper; cases were

demonstrated to the physicians and they were very much interested and so much pleased that they voted to have the paper printed and the demonstrations also printed for circulation among the members of the society. There is a hospital in Indiana that does splendid work in that line, but I do not remember what one it is; if the superintendent is present I wish he would enlighten us on this point.

DR. BRIGGS.—In redistricting the state institutions the plan would include doing away with the hospitals for the chronic insane; that will be done automatically. Each hospital group should have wards or buildings for acute, chronic, and I would go still further and say, for criminal insane. I think it is demoralizing to have a large criminal insane hospital; it is a most discouraging institution to handle. If the plan for redistricting was carried out there would be a small colony connected with each institution. We would have in each ward one type of mental disease, and men on the staff would specialize more; I would have one part of the institution for cases of dementia præcox; another part of the institution would take another form of insanity, and so on.

I would like to ask Dr. Goss in regard to the number of hours of employment of patients in the hospital. The statistics as made up at present convey no idea of the actual employment of patients.

DR. GOSS.—I have no statistics in regard to the number of hours, but I will say in a general way that patients working in the shops, the number of which I gave in my paper, unless they have parole, work half a day, which is from two and one-half to four hours; if they have parole morning and afternoon before and after their work is done they work from seven and one-half to eight hours—those working on the farm about eight hours; on the wards it is rather difficult to get the exact number of hours, as they work more or less all of the time after the meals are out of the way, and some patients work more steadily than others.

DR. MELLUS.—I do not know, but some of you may have a misunderstanding about Massachusetts. It is only fair to state that we have a state hospital for insane criminals, and another for epileptics; we also have two schools for feeble-minded, and we are paying special attention to such classification of our cases as is possible at the present time.

DR. STEDMAN.—Dr. Briggs, in closing the discussion on his paper, has alluded to the lack of separate provision for the female criminal insane in Massachusetts, and I wish to say that five or six years ago that matter was taken up by a committee of the Boston Society of Psychiatry and Neurology and thoroughly investigated. It was found that the female criminals in our hospitals for the insane presented no difficulties as to their care, except in one or two cases, and were comparatively few in number. It seemed, therefore, to be at that time an extravagant and unnecessary expenditure to construct a separate building for the female criminal insane, or an extension of our asylum for male insane criminals for that purpose, and the plan was abandoned.

PRECIPITATING MENTAL CAUSES IN DEMENTIA PRÆCOX.

By DR. AUGUST HOCH.

We have learned to regard manic-depressive insanity and dementia præcox as essentially constitutional disorders, *i. e.*, as due to an inherited defective anlage. We are, however, at present, not at all in a position to state in what sort of organic deficiency this anlage consists. In dementia præcox there is, to be sure, accumulating evidence of developmental defects in the brain, but what bearing these may have on the production of the disorder is by no means clear. It is also frequently stated that perhaps abnormal functions of internal glands are responsible for this disorder. For a theory that some abnormality of internal secretion may have something to do with the abnormal mental reactions, certain facts might indeed be adduced, but they can as yet hardly be regarded as anything more than suggestive for the problem in hand.

On the other hand, we do know that, so far as the manifest functions are concerned, *i. e.*, the mental side, we find in manic-depressive insanity and in dementia præcox more or less often definite abnormalities of reaction throughout life, in which this defective anlage shows itself *functionally*. I do not know how we could better formulate these personal peculiarities which exist in individuals who break down than by saying that they show some defect of adaptation. As a matter of fact we are learning to describe, to a certain extent, what goes on in dementia præcox in mental terms, because we can follow somewhat the steps of the deviation from the normal adaptation, and can see in the special forms of reaction in what way the adaptation fails. Above all, we are learning how various situations in life, *i. e.*, causes which can best be described in mental terms play an important rôle in these disorders, just as they do in the neuroses.

When I desire to speak to-day briefly of such precipitating causes in dementia præcox and dementia præcox-like reactions, I wish to be clearly understood that these causes are regarded as

nothing more than what the term implies, *i. e.*, precipitating factors, and that, moreover, they represent only the purely mental side of these precipitating factors. But even then they seem to me to deserve a good deal of attention, as through them we become better acquainted with the forces at work, the processes which go on in a mental breakdown, than has hitherto been possible by any other avenue. Because such a study of precipitating factors also aims at a better understanding of the meaning of reactions, it seems to me to be a very important field of psychiatric research.

It is often pointed out, especially in the case of dementia præcox, that the individual showed certain abnormalities before the precipitating causes were at work, and it is therefore claimed that the latter could not be of much importance. In a well-known text book for example while mention is made of certain "so-called" mental causes in dementia præcox, it is at the same time claimed that these are more likely symptomatic than really causative. If by this is meant that some internal factors are as much at fault as the external cause, we agree of course. But if we keep in mind what I have just said, it is obvious that, for the purpose in hand, any factor which we can show to be related at any time in the life of the individual with an increase of symptoms, or which leads to a greater failure of adaptation, must be regarded in the light of a precipitating cause, and must be looked upon as worthy of an attempt to understand it. What has stood in our way of recognizing these precipitating mental causes has been the fact that we regarded them too much from our normal point of view. We can understand, to a certain extent, the fact that a bereavement should cause a melancholia, because a bereavement is known to produce depression normally, although even this is really not an explanation. But we know that all our acts, mental attitudes and reactions, have a life history, a development; and psychoanalysis is teaching us to understand this development, and it is teaching us that there are factors of which we are not aware, yet which have a tremendous dynamic value in shaping our reactions. With these principles in mind we are better qualified to study the actual significance of precipitating causes which on the surface would seem utterly inadequate to produce the effect which they seem to produce, and we are learning to recognize in relatively trivial experiences factors of the greatest importance, and

have means to understand the reasons why specific factors meant so much to a special individual.

This has been clearly shown in the neuroses, but *we* are particularly interested in psychoses and we find that similar conditions exist in them, if we are willing and have learned to pay attention to them. We are not often able to make an extensive analysis in psychoses, but we can show not infrequently why certain situations represent the starting point of a breakdown. This, in other words, the existence and the meaning of precipitating causes which on the surface seem inadequate to explain the result—which, however, can be understood by further analysis or on psychoanalytic principles—I should like to show you briefly in a few simple examples of dementia præcox, or at any rate, dementia præcox-like reactions.

I shall first mention a case in which a cause was found which all of you have repeatedly seen as the starting point of a psychosis, namely, a sexual assault. But certain points in the case brought out by a more careful study also throw some light on the reason why such a cause should have produced the breakdown. The facts of the case are these: One night a man who had paid attention to the patient for some time made advances of a grosser sort. Almost immediately the patient developed her psychosis. She felt "a crack" in her head, "did not know" herself, people about her "seemed different." This was what we not rarely find as a rather characteristic beginning of a typical dementia præcox breakdown. We might say she must have been abnormal before. This is, of course, true, but we cannot deny the dynamic force of the cause, and we must therefore ask, why should the result have followed? Her history is interesting in this connection. We find that a slight change came over her at puberty, she became languid, rather hard to get along with, rather nervous, afraid to be alone. She also became more bashful, not inclined to have much to do with the other sex. She had, at times, crying spells for which neither she nor those about her could give any explanation. Another change came over her when the man above mentioned *began* to pay her attention. She became more difficult to get along with. Although she continued to receive the man's attention, she showed in other ways that an opposing force was also at work. She began to think, contrary to facts, that the other girls wished to take the

man away from her, that her cousin was telling him stories against her. But she worked during this time, and so far as we can learn, without difficulty. This went on for two years before the final breakdown occurred. The patient showed, therefore, three phases in the development of her psychosis: The first came at puberty, the second, at the time when the man began to pay attention to her, and the third, when the attention of the man became gross. We cannot very well escape the conclusion that the changes, which consisted in successive steps of a shutting-in process, occurred every time that a sexual adaptation was required of her. It is hardly necessary to point out that puberty, with its awakening of adult sexuality, and the first love affair represent such situations. That later it was not merely the gross assault which one might look upon from a superficial point of view as a mental shock, but a general incapacity for adaptation to sexual demands is evident from the history—and it is moreover shown in the next case of which we shall presently speak. Such a marked shrinking from sexuality is perhaps not easily understood from the normal point of view, but aside from the fact that similar principles have frequently been pointed out by Freud in the case of the neuroses, let any one look through careful anamneses of marked dementia præcox cases to see how pronounced this shrinking often is. Now the psychosis itself is also interesting. The content was very sexual. She felt that sexual sensations were produced in her, men talked to her, said "fierce things," etc. Her mind was therefore taken up entirely with sexual fancies. On the one hand, therefore, evidence of being unable to adapt herself to sexuality in reality; on the other hand, evidence that when this adaptation fails entirely, then her mind is dominated by sexual experiences in fancy. It seems, therefore, not too far-fetched to formulate the situation in some such manner as this: It seems that she shrank from having any outlet to her instinctive demands in reality, and finally, under stress, expended these forces in fancies, while then at the same time her contact with the outside world became markedly interfered with. This is a partial dynamic formulation of a case in which the ordinary clinical formulation merely speaks of an acute outbreak of dementia præcox.

The second case is similar, and indeed I could quote others of this rather characteristic situation. She is a young woman of

22, who became somewhat more unsociable at 17. (We were unable to find a cause for this.) Seven months before admission she made the acquaintance of a man. It is stated that she became at once very much infatuated with him, and got engaged after a short time, in other words, a rather precipitate affair. That there was something wrong about this is shown by what followed. She soon became abnormal, was afraid, had the idea that her fiancé would come after her with a knife, had crying spells, wanted to die. In spite of this she was encouraged to marry and of course very soon after became much worse and showed symptoms which are quite comprehensible from our view of the case, as they show us, like the earlier symptoms, her antagonism against the union or her lack of adaptation toward the sexual demands. She refused to go to bed at night, was afraid of her husband, was not sure whether it was her husband, and soon she got into a somewhat perplexed negativistic state. You will observe that here the situation was very similar to that of Case I, but without any shock of the more comprehensible sort, *i. e.*, comprehensible to our normal thinking, but clear from the point of view given above.

The next two cases show a somewhat different principle of precipitating causes, which we shall discuss after the facts of the cases have been given.

Case III is a woman whose psychosis, we are told, came on without cause. By inquiry it was then discovered that there existed, at any rate, a definite occurrence which immediately preceded the onset of the mental breakdown. The patient told us that a woman came to her saying that she had something to tell her. The patient refused to listen but at once began to worry a great deal, ostensibly because she had not listened to this woman. This apparent cause seemed to be quite an inadequate reason for the depression. The patient was, therefore, told to say something about the woman, and it finally came out that she was a person whose husband had deserted her. The patient's further associations led to the idea that perhaps her husband might be desirous of leaving her in the same way. (In all probability this thought was by no means clearly conscious at the time.) At this point the cause became somewhat clearer, but it was still necessary to

understand the setting of this cause. In this connection we found the following:

The patient, who is a woman of 38, is said to have been inclined to worry all her life, to brood over difficulties, and to be somewhat shy. She married four years before admission. That the adaptation to her husband was not perfect is seen in the fact that ever since marriage she showed certain mental or neurotic symptoms. On the one hand, she was decidedly jealous of him and suspected him of infidelity; on the other hand, she was always afraid some accident might happen to him. This latter trait was quite prominent and she was apt to picture to herself with anxiety what might befall him. We have considerable evidence that both of these symptoms are elaborations of the same theme, namely, that both represent wishes for freedom from the husband; the first representing this desire with a positive assertion of her own desire for other men, which is then projected to the husband; the other, the anxiety, a hidden wish that something may happen to him. We see, therefore, that the woman had for several years the desire in some way to get free from the husband. This desire, of course, was unconscious. Consciously we see it compensated in various ways owing to her moral opposing forces exerted by the main tendencies of her personality, and emphasized by the fact that she is a devout Catholic and, as she repeatedly stated, impressed with the fact that the church does not permit the dissolution of marriages. We now begin to see why the woman's apparently trivial statement had such an effect. The situation created by the woman was well qualified to rouse her most important subconscious wishes. The rousing of her subconscious wishes (without their becoming conscious necessarily) was first responded to with certain protective mechanisms, namely, anxiety and depression then with more marked symptoms of a dementia præcox-like reaction. We see such a sequence of more benign and more serious reactions not infrequently in dementia præcox. Here then the precipitating cause was at first not even mentioned, and when we found it, it seemed to have no meaning, whereas in its setting the significance became clear and the assumption that it really had something to do with her breakdown, much more probable.

Finally, I desire to present briefly a fourth case, which is somewhat more complicated. The patient is a young woman who has presented for several years a very slight condition which seems to be essentially one of mild dementia præcox, but in which she has had several sharper, more transient, psychoses. At first the general disorder came on after she had broken off a love affair. We cannot enter upon the significance of this now; what I desire to dwell upon particularly is one of the short psychoses which followed immediately upon the reading of a story. It seemed to be an interesting problem to see in what way this could possibly bring about the sharp attack of mental disorder. We were all the more inclined to take the patient's word for the statement that she became abnormal immediately after reading this story, and thus to look upon the latter as the precipitating cause, because she said that nothing she ever read gripped her like this particular story.

In order to understand the connection between the cause and the psychosis, it is best to describe the latter first, because it was through the analysis of the symptom picture that the understanding of the meaning of the cause came to us. The psychosis, which, by the way, was not associated with any clouding of consciousness, lasted about a week. At first glance, the actions and the productions of the patient during the period were quite incomprehensible. The condition was, however, carefully described and later analyzed as a dream is analyzed. The main parts of the trend were taken and the patient's associations were noted. They led to, essentially, two topics—the dead father, on the one hand, sexuality, death, and having children, on the other hand. Without going into details I shall simply state that it was then found that the leading trend in the unconscious which manifested itself in and determined the symptoms of the psychosis, was what we may roughly formulate as an idea of having children with her father. This was further corroborated by a study of the content of other former brief upsets in which the same meaning was again found, indeed in them this meaning was even less veiled than in the recent attack. In one of them she heard the voice of her dead father calling her, then felt she was dying, but she also thought she was being delivered of a child and that a picture in the room of a woman and a child represented herself;

or again, on another occasion when in a general hospital the physician came in and spoke to her, a physician who reminded her of her father, she called him father and then said "I am dying." From many associations it is clear that death and sexuality are closely related in the mind of the patient, as they are indeed not infrequently in many others which I had an opportunity to study. At a later visit with the same physician, she saw her father, as she puts it, in or behind the doctor, then a vision of a female figure which had some characteristics of herself, and on the other side, many small spheres. To the latter she associated eggs and also children. In several upsets then, this same trend recurred in various guises, so that we cannot doubt its real significance, namely, that of having children with her father. This too brief sketch, as I said, was necessary to understand the reason why the story could act as a precipitating cause.

The story, which by the way was miserable, from a literary standpoint, and which for this reason was all the more unlikely to impress a girl of very fair artistic taste, had it not been for some special reason—represented a phantastic scene in the wilderness of Canada, where three people lived together far away from civilization—an older man, an older woman, and a young girl. The man was called a mystic; he had occult powers over every one, even the animals of the region. He was a fanatic, who called himself Adam because he wished to be the father of a new, perfect race. A similar idea, namely, to be the source of a new, more perfect race, had appeared, before the story was read, in the patient's dreams and fancies. Adam had a child with the older woman, but finding that the child had a blemish he makes up his mind to abandon the older woman, to sacrifice the child, and to marry the young girl so as to accomplish with her the desired end. The marriage is about to take place, mystic, symbolic ceremonies are gone through. The young girl, whom the patient clearly (though not consciously) identified with herself, just as she identified the old man with her father and the older woman with her mother, feels a demonic attraction to this older man, and only escapes finally by being rescued through the interference of a young hunter who had entered the precincts.

This was then the story which gripped her so and which was immediately followed by the delirium above described. I think even with the fragments of the analysis which I have given, it is clear why this should have been so. It represented her own unconscious conflict, her own unconscious demonic attraction to her father. A word should perhaps be added about this so-called incest complex, or for the man the Œdipus, for the woman the Electra complex. The idea of a sexual attraction to the parents is something so revolting and so absurd to the normal mind that it is at first difficult to accept that it should be of such widespread importance as it plainly is. But we must remember that we are, in this, dealing with an infantile attachment from which the individual has not been capable of freeing herself in a normal way, or to which she has again regressed, and that love, with the attributes which belong to it, is more or less centered upon the father imago. Otto Rank has given us a valuable work recently in which he furnishes a wealth of material demonstrating the importance of the "Inzest Motiv" in poetry and myth; and we as psychiatrists, who have daily access to the study of dementia præcox, where this complex is often so apparent and so plain that we cannot help seeing it, we must above all others see its importance in determining symptoms, and its dynamic force.

We have, then, in the last two cases another principle. The precipitating cause roused certain subconscious wishes by bringing from the outside a certain set of ideas which were in harmony with these subconscious wishes. However, it is probably an important principle for this type of precipitating cause, that the situation brought from the outside be sufficiently veiled so that the conscious personality cannot deal with it. What seems to follow then is either a liberation of protective mechanisms, such as perplexity, anxiety or depression or essentially an overpowering of the conscious personality by the subconscious wishes.

It has recently been pointed out that we can speak of psychogenic psychoses only when the content of the precipitating cause is also found in the content of the psychosis, and that this is a relatively rare occurrence. From the cases here presented it seems clear that such a relationship of cause and psychosis must be much more frequent than the view based on the merely superficial aspect of cause and psychosis would lead us to believe.

In this brief discussion I had to limit myself to a short account of a few cases in which we have tried to understand somewhat what takes place. It might be said that the formulations given are perhaps one-sided, and it must be frankly admitted that in our present state of knowledge we have to look upon all such formulations as tentative. But I do not think that we should therefore shrink from attempting to form some opinion as a working hypothesis for our investigations. It seems to me that we have been able to find out two types of precipitating causes: First, those which represent plain sexual demands which the patient cannot meet; and secondly, those which stir strong subconscious wishes. There are, of course, other types of causes. And I hope also to have shown to you that a study of precipitating causes from the point of view of psychoanalytic principles is an important field of psychiatric investigation which, as I have said, helps us to get a better insight into the forces at work than we can at present gain from any other avenue of approach. We have dealt entirely with dementia præcox, but our experience at the Psychiatric Institute has convinced me that such a study is also of value and destined to reveal important facts when applied to the investigation of the manic-depressive psychoses.

DISCUSSION.

DR. WM. A. WHITE.—I was greatly delighted to hear Dr. Hoch's paper. It is always illuminating to hear the interpretation of psychoses rather than simple descriptions. We have already gone beyond the point of merely dissecting things, and we are now looking for reasons. I am reminded of a patient I saw day before yesterday. He came to me and told me that he had had an attack in a theatre when he was viewing a moving picture show, and he described the attack in this way: He said he had a feeling as if he was becoming paralyzed in his arms and legs. The film showed the rescue of an adopted child by a fireman, and a second film was a Wild West scene; a young man who had been refused marriage by his sweetheart, had run away and joined a tribe of Indians.

The man had been married four years and had had no children, which fact bothered him a great deal; he had consulted a physician and his wife had consulted a physician several times and had finally undergone a slight operation. The seeing of this moving picture show came on the anniversary of his wife's operation. His attack was like an attack he had seen some years before, and about which he had come to the conclusion that it was due to some sexual indiscretion. At the age of 15 he had resorted to masturbation, and he had fully decided in his own mind that

his lack of children was due to these sexual indiscretions. So you see these films brought the events of more than fifteen years past and his indulgence in masturbation came immediately after his father's second marriage to a woman he described as being nearer his age than his father's age, and it is fair to presume that he had something verging on love for his foster-mother. He had a feeling in connection with his neurosis that he was about to become insane. When he saw in the film of the Wild West show the going back to primitive conditions it corresponded to his desire to throw off the conventions of society, and so the films become the precipitating factor in a very complex situation, and they have only produced a psychosis, I think, by suggesting a wish fulfillment. Now when the unconscious and the fore-conscious wishes come together then we have the true precipitating factor for a psychosis, and the thing I want to emphasize particularly is that it is absolutely essential to know some part of the psychology of the unconscious before we can reach any true appreciation of the psychology of the interpretation of a psychosis.

The books of fairy tales which you bring your children up on are filled with complex stories and you will find not infrequently the precipitating factors in psychoses come from those very stories which the children are allowed to feed upon.

THE PSYCHONEUROSES FROM THE STANDPOINT OF THE PSYCHIATRIST.

BY EDWARD L. HANES, M. D., ROCHESTER, N. Y.

The influence of peripheral lesions in the genesis of the psychoneuroses has occupied the attention of the medical profession for many years, with much diversity of opinion relative thereto. The intensive study of anatomy and pathology and the worthy effort to establish disease processes upon demonstrable fact in our modern medical schools have developed physicians keenly alive to physical alterations of the body and with a consequent tendency to regard all clinical manifestations of disease as of physical origin. It would be folly, indeed, to question the wisdom of the medical schools in assuming that the pre-requisite to the correct interpretation of clinical symptoms generally, is a sound understanding of anatomic and pathologic facts, together with those of their attendant branches. At the outset, therefore, it must be emphasized that no such questioning thought is here entertained.

The members of this association can all recall a time not long remote when psychiatry was deemed the most backward field of medical knowledge; when, in fact, the general profession looked askance at the scientific attainments of the psychiatrists—and practically solely for the reason that psychopathology was not established on an adequate anatomic basis. It was but to be expected, under such circumstances, to find in the evolution of specialism in medicine based on recognized anatomic changes, that those engaged in such special practice should choose to interpret mental and nervous symptoms for themselves without regard to the psychiatrists and neurologists. Added impetus was given to this tendency through the further fact that many neurologists were but indifferent psychiatrists and were themselves frequently inclined to acquiesce in this theory of peripheral origin of central psychotic symptoms, especially in that comprehensive group of cases falling rather without the usual field of psychiatric activity embraced within the term psychoneuroses.

I think that most physicians who deal extensively with the psychoneuroses, and who have had adequate training in psychiatry, are quite inclined toward conservatism in ascribing any large number of these cases to peripheral lesions *per se* in the presence of an essentially normal mentality. While not prepared to deny the possibility of such a genesis, they are certain of its rarity, and hold that only in the presence of a central nervous system predisposed to easy upset by reason of constitutional nervous instability, or as a result of depleting and exhausting bodily conditions, do we commonly observe peripheral lesions exercising marked influence in the genesis of the psychoneuroses. Were this not the fact it seems inevitable that we should constantly witness the greatest prevalence of nervous and mental disorders of this nature in every surgical condition, which, of course, is not the evidence of experience. They are aware, too, that identical disorders of nervous and mental type which are ascribed by advocates of this theory to lesions of the peripheral nervous system may be, and are just as commonly, duplicated in the absence of any demonstrable or probable peripheral lesion, as the following two cases serve to illustrate most forcibly:

A year ago a young Jewish woman of about 23 years was referred to me by one of our local nose and throat specialists, exhibiting a well-marked psychoneurosis in the nature of a dominating obsession relative to a supposed nasal difficulty. Some months earlier she had consulted a prominent nose and throat specialist of our city, who had diagnosed nasal obstruction of some sort, and who had operated for the relief of one nostril. There then arose some misunderstanding relative to the fee for the work, with the result that the obstruction to the opposite nostril was refused attention. Comparatively soon her distress was such as to take her successively to two other reputable nose men, both of whom performed operations for the relief of the remaining obstruction, and both of whom assured me that every indicated surgical procedure had been undertaken in her behalf. The first operator, however, was manifestly annoyed at certain features of the case and asserted positively that there was probably remaining difficulty which he could remove. The young lady herself, the daughter of an insane mother, was much upset as a result of so much controversy, continued over a period of months, and when

seen by me was completely dominated by her nasal affliction. It was impossible to convince her that there was nothing more to be done in a surgical way to her nose, and she was sure if the first physician could again treat her he would be successful in completing her cure. She wept and bemoaned the fact that no one could help her except the first specialist, was unable to think of anything else or to apply herself to any occupation, and her days were given over entirely to the contemplation of her unhappy condition. I quickly found that I could gain absolutely no control over her, and she was resentful against the thought that there could be any mental complex in her case. The fact that two other excellent nose specialists were positive no further operation was indicated failed to impress her in the slightest degree. Under such circumstances, and fearing that her mental integrity was being undermined, I communicated my opinion of the underlying mental mechanism in the case, to her first physician, with the suggestion that personal differences be waived and his reassurance of the completeness of operative measures in agreement with the other specialists be given her. This he refused to do, taking a distinctly adverse position, asserting that he believed difficulty still existed uncorrected in her nose, and that he was familiar with many cases of this sort originating on the sole basis of nasal trouble, the correction of which had been followed by recovery. At last, under the influence of a rather blunt statement relative to his responsibility for further mental upset, he undertook her further treatment and the patient was lost to my observation for many months. In April, 1913, however, she returned to my office asserting that she had expended \$700—all the money the family had to devote to such purpose—in a vain effort to obtain cure; that she was then under another nose specialist, who maintained that the trouble was now located in the frontal sinuses, and who advised that she go to New York city to consult still another nose specialist. The family now state their belief that there is nothing really the matter with her; the patient tells me confidentially that she feels like destroying herself; that her home relations are unbearable, and that life holds nothing for her. The situation may be better imagined than described.

The last day of January, 1913, a second case came under my observation, in which an obsession was dominating the life of

the patient, and in which the nose was again the source of complaint. The patient was a woman of 33 years, of Irish ancestry and of comely appearance, possessed of an oval face, jet-black hair and eyes, and a nose of pronounced Roman type, giving her a decided impress of Jewish lineage. She felt that her nose was a disgrace; asserted that she looked like a Jew; thought everybody noticed and commented on her appearance; said she became nauseated if she looked in her mirror; her heart would sink and she belched large quantities of gas. She was greatly perturbed, wept in the office; said she was going insane and would rather die than lose her mind; admitted her husband was most kind to her, but insisted that she was such a repugnant person that no one could possibly care for her; her friends must only tolerate her. She could be only partially reassured, and besought the physician piteously to suggest some operative procedure which would change the shape of her nose. The explanation that her nose represented a perfectly normal type and that she was not unattractive gave her only temporary satisfaction. There was absolutely no complaint or suspicion of anything abnormal about her nasal organ.

Here are two cases presenting almost identical mental symptom-complexes, in one the development being ascribed to a peripheral irritative lesion within the nose itself, while in the other no thought of such a method of origin is entertained. Can any competent observer doubt that the real mechanism of development is identical for both cases, and that such mechanism is of purely psychogenetic character in the presence of poor balancing faculties?

It would be unnecessary to comment further on this subject in this assembly of psychiatrists were it not in emphasis of the thought which has seemed to me to justify this presentation at all, viz., that large numbers of our contemporaries in other medical fields of activity do not recognize this psychogenic mechanism in the evolutionary development of the psychoneuroses, and themselves constitute a great menace to the mental integrity of these constitutionally predisposed individuals by reason of their professional attitudes in dealing with such patients.

If we consider again the first case cited above—that of so-called peripheral origin—it is certain that this young woman was at first

sufficiently annoyed by the obstruction within her nasal passages to send her to a nose and throat specialist for relief. In discussing her case freely with her as he did, intimating that there was remediable difficulty present he convinced her at once that her fears were correct and that an operation would be necessary. Now it is impossible to say just exactly what anxieties were kindled within the mind of this nervously organized patient, but whatever they were they were soon accentuated by the problem of meeting a large fee, deemed insufficient later by the doctor, which in turn sent her away from his office with her obstructive difficulty only partially relieved and her mentality increasingly agitated. Under such circumstances, of course, she could not rest, with the result that other specialists were consulted; other operations were performed; discussions and controversy between the several physicians and in the presence of the patient arose, till the nasal appendage became the most vivid and dominant concept of this young lady's consciousness. In the case of the Irish woman it is apparent that the shape of her perfectly healthy nose giving, to her mind, certain obnoxious racial characteristics to her appearance and undoubtedly leading to frequent, not necessarily, ill-intended comment on the part of relatives and friends, formed a sore point in her psychology and gave rise to internal conflict with unhappy ruminations of a self-depreciatory nature which later constituted the basis for her obsession. Whether one accepts the dissociation hypothesis in the mechanism of production of these obsessions is immaterial in this present connection: the fact remains that the genesis in both instances was purely central and psychologic, not peripheral except as the irritation within the nose in the first case and the shape of the organ in the second served to focus the internal mental life of both patients in an unhealthy way.

Within the past few years a considerable number of psychoneurotic cases have come under my observation, and, in an effort to analyze the mechanism of development so far as lay within my capabilities, I have been astonished at the apparent part played therein by the discussions and conflicting opinions of the various physicians who had been successively consulted by these patients. It is the common history of those so afflicted that they pass from one physician's hands to another in a vain search for help. These physicians are untrained in the interpretation of mental phenom-

ena and, almost without exception have no more knowledge of mental mechanisms so far as they relate to abnormal mental states than the average layman. Under such circumstances it is not surprising that they seek to establish the psychic symptoms on physical bases within the realm of their own special fields of practice. Thus the eye, ear, nose and throat, the stomach and intestines, the cardio-vascular system, and specially the genito-urinary apparatus, are successively indicted as the source of the difficulty, with the result that these patients are greatly agitated and upset; the extent of their trouble is unduly magnified by them, and they are forced inexorably into a state of confirmed psychopathy largely through the indiscretions of their misguided physicians. It was but a few months ago that I was consulted by a hopeless case of this sort, whose astounding recital is a splendid illustration of the point I wish to make. Lest the story seem incredible I will state that the physicians, whom I will designate alphabetically, are all known to me, and their specialties, personal characteristics and methods of treatment are usually so correctly indicated that I have no hesitancy in asserting that in all essential particulars the patient's statements give a distinct impression of trustworthiness.

The woman, aged 35 years, gave no reliable intimation of her ancestry and I have no information relative to her own mental organization aside from her statement that she was temperamentally nervous. A few years before she had passed through a difficult child-birth and shortly afterward, while in a weakened physical state, she was forced to bear an upsetting sorrow in a succession of deaths in her family, including the baby, her mother and her husband. As a result she passed into a condition of what was referred to as "nervous prostration." She consulted Dr. A, who, following examination, removed her to a private hospital and, with Dr. B, operated for the repair of a lacerated cervix. As she did not improve nervously she consulted Dr. C, who stated that the fundus was "too large," so that she underwent a series of local treatments at this physician's hands, which were finally interrupted by reason of a cross-continent trip of the doctor. She then consulted Dr. D, a surgeon, who, following examination, stated that he found the pelvic organs in "terrible condition," and who took her to another private hospital for treatment, which

proved to be in the nature of a complete hysterectomy, undertaken as the patient informs me, "without her knowledge or consent." Subsequently when she began to suspect that something was radically wrong she questioned the surgeon, only to be informed that her condition justified the procedure "and that he was performing so many similar operations as to be entirely certain of his position." She assured him that no other physician had spoken to her of such a necessity; expressed her disapproval, and was told "to go home and stop talking about it and she would be better than she ever had been before in her life." Of course her condition was greatly aggravated when she found herself unsexed, and she was so worried and upset that she soon consulted Dr. E, an excellent surgeon and a conscientious man, who told her that "she had a small tumor in the vaginal wall which ought to be removed at operation." This she refused on the say-so of any one man, in view of her particularly disastrous surgical experiences, so she consulted Dr. F, a woman physician of excellent standing in the community, who asserted that she found no indication of vaginal tumor or for operation. In view of the importance of Dr. E's opinion, however, Dr. F advised her to consult Dr. G, another woman physician of large practice, who stated that she could not substantiate the diagnosis of vaginal tumor, but who asserted that "patient had sciatic neuritis which might lead to a paralytic condition." In a state of greatly accentuated nervous agitation and in great dread of possible paralysis she next consulted Dr. H, a surgeon, who confirmed the opinion of Dr. E, relative to the presence of a small vaginal tumor and the need for operation. But the patient could not bring herself to the point of submitting to operative measures again, so she went to Dr. I, a member of the Spiritualist Church, who treated her for reputed heart disease. This man, whom I know very well, and who is really a physician of the most kindly presence and intentions, ultimately felt that her nervous system required treatment which he could not give, so he explained to her that a layman friend and church fellow was a magnetic healer and had accomplished some remarkable cures in nervous cases similar to her own, and suggested that she place herself under this healer's treatment. This consisted in a peculiar, rapid finger vibratory movement along the spine for the purpose of "keeping the nerves from setting," as

she was assured. This procedure really appeared to produce a marked effect not altogether satisfactory in that while her pain was temporarily dispelled, later it appeared to return with increased intensity, and to involve her head as well as her spine. This healer would not specify any definite time within which she might expect cure, more than say that "it might take two or three years." So when she decided to leave town for a time and asked him to recommend some one to continue his treatment he advised her to take "absent treatment with him." She then decided to take massage from a local masseur, but found it unavailing and consulted Dr. J, a nerve specialist, who "would not tell her very much about her trouble, and who would not confirm the diagnosis of 'sciatic neuritis,' but who treated her for some time for 'stomach trouble.' " Dr. K, a surgeon and general practitioner, next treated her, telling her some strange tale which I do not recall, and at length she fell into the hands of a young general practitioner who had had psychiatric training, and who told her for the first time that her trouble was, in his opinion, of a functional character. I think I may be pardoned when I state that in view of this remarkable narrative I had no courage or desire to add my name to her list and refused to undertake her treatment. I did attempt to review the situation to her and to point out the mechanism back of her trouble, but evidently unconvincingly, for at last accounts she had consulted two other physicians of my acquaintance.

Now such a narrative as this undoubtedly has its humorous side, but when we consider the effect on this unfortunate woman's mind of so many and such diverse opinions of the numerous good, bad and indifferent physicians whom she consulted, not one of whom was qualified to treat her case and not one of whom was aware of his own limitations in this respect, I think you will agree with me that the humor of the situation becomes very grim, indeed, and that really such a case constitutes what might properly be termed a medical tragedy, with the doctors in the rôle of evil spirits.

What shall we say of practice of this sort—is it legitimate practice or is it mal-practice—and is there any possible remedy for such a state of affairs within the ranks of our profession? This case, while extreme, is only one of many which could be brought

to your attention and represents a type with which you are, perhaps, sufficiently familiar to know that it is in no way unique. My own belief is that such practice constitutes a real evil in our profession, but one in which physicians generally have no sense of their own duplicity owing to the deficiencies of their under-graduate training, which teaches them nothing concerning the simplest mental mechanisms. I am not a teacher of psychiatry or of psychopathology and I am aware that it is much easier to criticise than to rectify errors in teaching, but I cannot remain insensible to the fact that these medical men in general and special practice are all graduates of our medical schools, in which psychiatry and neurology are taught. I have been interested recently in several articles by teachers of psychiatry—members of our own association perhaps—outlining the aims and objects of their teaching, and I have no special criticism or commendation for what they have said. I would like to ask, however, just how much practical knowledge of psychiatry any member of this association ever gained as a result of such under-graduate teaching? Did you learn to diagnose any mental state whatsoever as a result of your under-graduate study, or was psychiatry the one thing in all your course about which you thought you knew something but found you knew nothing? In fact, I am prepared to assert that it could not be otherwise, for you all recall what perplexities confronted you during the early years of your asylum practice. Only a few cases appeared clear-cut and simple—the problems of diagnosis; the interpretation of the significance of mental symptoms, and the questions of prognosis were bug-bears not for weeks but for a period of several years. And, furthermore, we know now after all these years of asylum association and study that the wisest among us are often compelled to speak softly in the presence of mental symptoms even to-day. So the problem of how best and what to teach under-graduate students in matters psychiatric can hardly be considered as settled, I am quite sure, and one must needs pause after such recitals as have been presented, with the question, "What can be done about it?" I beg you to believe that I do not deem myself competent more than to discuss the subject, leaving it for wise men to reach conclusions, but considering the present deficiencies of the profession at large concerning all things psychic, and having in mind the shocking

consequences to patients of such deficiencies, it would seem that more time should be spent in our medical schools in attempting to understand something of the simpler mental mechanisms underlying abnormal psychic states. It is not necessary that we should accept completely the Freudian theories in order to appreciate the wonderful stimulus which such tireless, painstaking and exhaustive studies give to our efforts to understand abnormal psychology. They are attempts to deal with the very fundamentals in the development of abnormal psychic states, and we should welcome and utilize these and similar studies for just what they are worth to us when tested by the searchlight of unprejudiced and intelligent examination and understanding. Certainly they recall to our attention apparent facts which can hardly be ignored if we wish to interpret the significance of the psychoneuroses. The influence of fear and of psychic traumata, with reactions in the nature of defense and compensation; the psychogenetic possibilities of constitutional mental trends in the presence of deficient balancing faculties; the effects of moods and mental attitudes; the danger symptoms in psychopathic states and when to commit—all these considerations are of the utmost practical importance to the general practitioner and to the medical specialist if he is to deal most helpfully with his patient. In a suggestive way, therefore, I offer these observations feeling that the teaching of a few fundamental principles in abnormal psychology, together with a few practical points for guidance in actually dealing with psychopathic states, are about all that can be assimilated by the under-graduate and constitute a helpful basis for a practical dealing with his patients when he takes up the practice of medicine.

And finally, it seems to me, it may well be asked, what shall be the responsibility of this great association toward this teaching problem, comprising as it does within its membership nearly all the teachers of psychiatry in the United States and Canada? Shall it disclaim responsibility altogether; shall it be satisfied with the present teaching, which turns out graduates incompetent to deal with beginning psychiatric problems, or shall it advocate a more adequate dealing with the fundamentals in psychopathic states, greater attention to the borderland developments, the bringing of the psychoneuroses within the field of psychiatric

teaching where they belong, and the consideration of certain practical issues to the end that intelligent treatment may be accorded these cases at the hands of the general profession? This, gentleman of the American Medico-Psychological Association, is the question which I would bring before you at this time.

DISCUSSION.

DR. BURGESS.—I listened with a great deal of interest to this paper, inasmuch as I am supposed to be a teacher at McGill University. For twenty-three years I have lectured to the students there and I thought them fairly intelligent. This year I introduced an innovation—I said we will have a clinical examination. Each student of the class was given two patients, cut off from everyone else except a nurse, who was supposed to give all the history the friends of the patient would give. The result was about 50 per cent failed to make good. They got through the examination, but simply because the clinical examination was combined with the written examination; in other words, they literally did not know anything about the subject in the true sense of the word.

DR. WM. A. WHITE.—I have listened to Dr. Hanes' paper with a great deal of interest; it presents a problem which all of us are constantly dealing with. It is a very common thing to see a patient who has been to doctor after doctor for some trouble that does not exist. I teach psychiatry, that is, I lecture on psychiatry. I have ten hours to present the subject in. The medical colleges do not appreciate the necessity of it; it is not all the fault of the teachers of psychiatry.

This case Dr. Hanes has mentioned, of the woman who was unsexed without her consent, is clearly a case of mal-practice according to law; there was absolutely no right on the part of the operating surgeon to do such a thing; it was really criminal to remove those organs without anything being the matter with them. Why do specialists go on giving treatments when they know perfectly well there is nothing the matter? I do not know why unless it is because they get a fee, and they allay their consciences by saying, "It will help the patient." If there is nothing that they can do to help the patient, or they find that the field of helpfulness does not lie with their specialty, why don't they send her to some one who can help her?

There is one thing this association can certainly do. Its members are distributed in all parts of the United States and Canada, and every man can present to his medical societies this aspect of the thing because he will have repeated opportunities to do so. Psychiatrists should not get far away from the general practitioner, because he needs them as much as the patient does. I think such papers as this are distinctly helpful to us to emphasize this question.

DR. BRUSH.—I think the fault in regard to the teaching of psychiatry is not so much with the teacher. I do not know of more than one school that

attempts properly to teach psychiatry. I presume the majority here never heard of psychiatry until after they graduated from medical school. The difficulty also, with the situation is that the patient goes to this and that specialist, and as Dr. White says, why does he treat the case; why doesn't he send him or her away if the case does not require treatment? If he sends her away she will go to somebody else. In order to do as Dr. White has suggested in our medical societies, but primarily in our medical schools, we must insist upon a clearer understanding of the cases by the general practitioner. We have all had experience on this line. Our medical schools must be taught to appreciate the fact that ten weeks, sixteen or twenty-four weeks is altogether too short a time to give any adequate teaching to psychiatry, particularly when the majority of that teaching is given by lectures without any clinical opportunities whatever.

DR. BURGESS.—The fault is not with the teacher, but with the student. You cannot drive it into the average student's mind that you have got to *feel* a thing. Students as a rule cannot grasp that fact. I see a case; I feel the man is insane, but I cannot put my finger on certain indicative facts. You cannot knock it into students that in mental cases they have often to feel that such and such is the case.

DR. HANES.—What I wanted to bring out in my paper was the idea that we cannot learn detailed psychiatry in the medical schools in that way. My feeling is, and what I wished to point out was that it should be toned down to the level of the men; we should not preach over their heads, which is about what the present teaching of psychiatry amounts to.

DEMENTIA PRÆCOX.

SOME OBSERVATIONS AND COMMENTS.

By EDWARD E. MAYER, A. M., M. D., PITTSBURGH, PA.

That there are various types of psychotic states included under dementia præcox is well understood. We are still unable to definitely separate them. Nevertheless, many clinicians still insist upon ignoring this and whenever they speak of dementia præcox imply in the so-called Kraepelinian sense a progressive deteriorating disease with but one possible outcome. They ignore the fact that Kraepelin's grouping was and remains a tentative one, that he recognizes the occasional possibility of purely psychogenous psychoses having the earmarks of dementia præcox and being branded as such during the attack. It is not therefore incongruous with his views to recognize that manic-depressive symptoms may precede the attack of dementia præcox or that mild types occur especially with constitutional inferiors which are difficult to place in a psychogenous or an incipient dementing class. As long as surface symptoms alone are considered, this difficulty must remain an unsolved one. The attempts to solve this problem by linking the mental symptoms with physiological and neuropathological findings have as yet not succeeded in clarification.

There are undeniably progressive deteriorating cases of dementia præcox who present at death terminal changes such as Alzheimer, Klippel, Zimmerman, Sioli, Southard and others have described. Their connection with dementia præcox is by no means clear, neither stratigraphic nor topographic studies nor cytopathological changes having proved their causal relationship as yet. The various ocular, cutaneous, blood and glandular alterations which have been described, likewise are not definitely either cause or part of the disease. On the other side, the psychologic explanations have attempted the problem of a practical working basis in dealing with the individual who presents symptoms of dementia præcox. Jung, in his "Psychology of Dementia Præcox," attempted to bridge the gap between the two camps with

his ingenious hypotheses of a toxin action resulting from the emotional undercurrent included in the suppressed complex and many suggestions have since him been advanced concerning thyrogenous and other toxins.

The clinician to-day must depend upon an exact analysis of each patient's symptoms, not with reference to any similarity to any other disease type, or their relationship to possible brain or gland changes, but as regards the make-up of the particular individual and how his reactions were produced. In other words, he must consider biological and psychogenetical factors rather than neuropathological ones.

The various conditions embraced under such phenomenologic descriptive terms as apathy, emotional torpor, restricted volitional capacity, wax-like flexibility, stereotypy, etc., must be noted and considered, but they will not differentiate individual conditions for us.

An effort must always be made to discover what has caused them, whether any "complex" determinations are in question, and an endeavor made to reach an undercurrent of mental life which, transformed and sublimed, has given us the surface symptoms and moods of the patient. Meyer's conception of imperfect biological reactions with consequent efforts at readjustment, Hoch's personality studies, Stransky's neurologic hypothesis of an intrapsychic ataxia were fruitful. It remained, however, for Bleuler¹ developing Freud's and Jung's researches to give us a deeper insight into the fundamental problems in question. He has shown us that dementia præcox individuals occur who never become actual psychotic patients and that fundamental characteristics of humanity are more potent than the evanescent phenomenological characteristics of Kraepelin.

Whether schizophrenic negativism is found in individuals whose psychosis is not a dementia præcox type, and whether the dementia præcox make-up is not with some (negro?) not only their normal but a normal type representing to an increased degree that myth-forming power of humanity which still lives in dreams and in the psychoneuroses (Jung), are problems which remain to be determined.

¹ Bleuler: *Dementia Præcox oder Gruppe der Schizophrenien*. Aschaffenburg's Handbuch der Psychiatrie, 1911.

In order to understand the origin of symptoms, their analysis must probe deeply into the mental attitude of the patient. Psychoanalysis does not necessarily, however, imply a blind follower of Freud. It must give him credit for fixing the importance of individual reactions, of "out of conscious" or expressed thoughts and feelings of making us realize that affective states may detach themselves from the ideas which have given rise to them and create psychotic episodes, and that sublimation and symbolism are potent factors in our psychic life. Bleuler has coined autistic thinking² to denote one of the important symptoms of dementia præcox. This is the mechanism of day-dreaming or of sleep dreams which, when it acts continuously, becomes the "twilight states of hysteria or the hallucinatory fulfillment of the wishes of the schizophrenic." He considers negativism³ not as a motor phenomenon but as a psychic expression of reaction, both to environment and to thought, and embracing two opposite feeling tones. A dementia præcox make-up, a certain mental attitude, must exist which, under certain influences, dominates the individual, renders him inaccessible to other mental reactions and brings out the characteristic symptoms of the dementia præcox group of reactions. It is not that a dementia præcox patient has a remission as much as that he again becomes able to think logically without pain or distress and that he is no longer compelled to protect his thoughts from hurtful associations. Such a psychogenous origin and termination of an attack in a patient with a dementia præcox make-up need not happen but once in his or her life time. We can readily understand Bonhoeffer's argument⁴ that there occur psychotic episodes which present the same surface symptoms as does dementia præcox but which are psychogenous and not part of a progressive dementia præcox. We would differ, however, in this respect, in that we recognize that upon individual analysis we find the same mechanism at work in bringing out the symptoms, that many so-called psychogenous psychoses do not differ from dementia præcox types, that dementia præcox groups

² Bleuler: Das autistische Denken. Jahrbuch fuer Psychoanalytische, etc., Forschungen. Vol. IV, Part 1, 1912. Compare Freud's autoeroticism and Jung's introversion.

³ Bleuler: Zur Theorie des Schizophrenen Negativismus. Psychiatrisch-Neurologische Wchft., Vol. XII, 1910-1911.

⁴ Bonhoeffer: Degenerationspsychosen. Carl Marhold, 1907.

include some types which are not progressive and perhaps not necessarily deteriorating. That the determination of psychogenous factors is necessary in all of our patients, I firmly subscribe to. This does not imply that we consider such analysis always as of therapeutic benefit or that we must *nolens volens* interpret all the thoughts and actions of our patients as a strict Freudian does.

S. S., æt. 28. A successful salesman and the support of his widowed mother becomes engaged. His mother continually begs him to break his engagement, descending to various lies and innuendoes to influence him. On one occasion she followed him on the next train to the city where the girl lived and was noticed peering through the window in the rain. After being asked in, she stayed and secured her desire of watching the son and interrupting, if possible, any courtship. Finally she obtained his promise to give up the girl, and he started for the train to go and break with her.

Instead of this he married her a few days after his arrival there. Forty-eight hours later he took to his bed with a fear state which had deepened, when I saw him, into a symptom-complex which could only be called dementia præcox. Negativism, perseverations, apathy, delusions of poisoning, stereotyped movements and mannerisms, filthiness in habits were his marked symptoms. Five months later this young man went back to work. His family and friends regard him as normal, but there remains a compensatory defense reaction with a complete aversion for his still virgin wife which shows how readjustment was secured. One complex had triumphed. He has succeeded in shutting his wife out of his mind and in retaining intact his old deep-seated mother love. His wife, he is convinced, deserted him, and thus he justifies his present repudiation of her. Happily both desire a divorce, as his wife, who has returned to her mother, recognizes the true state of affairs and realizes that if he were the former lover with a normal mind he would want to come to her.

Such a psychotic episode illustrates what I have above stated in connection with schizophrenic reactions. It does not necessarily imply deterioration or further attacks. To the onlooker the man is normal. From a phenomenologic point of view he now presents no psychic anomalies. His dementia præcox make-up is given corroboration by his family history. Twelve years ago, shortly before his death, I saw in consultation, his father who presented catatonic symptoms; one brother, long since dead, was diagnosed dementia præcox, and his brother, who committed suicide, was a constitutional inferior with dipsomaniac tendencies.

This young man, unlike dementia præcox properly speaking, had a psychic attack as a result of emotional experiences. True dementia præcox, or at any rate, the type with deterioration and

which tends to progression, does not present a direct connection between cause and effect as with this young man, nor did he evince the degree of disregard and indifference to surroundings which we find with schizophrenics as a rule. But otherwise his symptoms could not be distinguished from those of dementia præcox and were so regarded by several other physicians.

Such patients illustrate what Jaspers⁵ discusses in his recent monograph on dementia præcox in reference to the reactive psychoses in connection with dementia præcox.⁶ "That the thoughts of an individual may be developed logically, must never exclude the recognition that their content may be the result of fears, wishes, emotions, etc., *i. e.*, psychogenetic."

That these may be the result of defects in physiological function does not alter the fact that to the clinician there is nothing in common between physiologic and analytic psychology or, in other words, experimental and understandable psychology.⁷ "The determination of intellectual capacity and deficiency, the question of consciousness, the interpretation of behavior of conduct and of the capacity for work are necessary but do not exclude the necessity of a subjective or analytic psychology." He emphasizes the distinction between explaining thoughts, sensations, hallucinatory ideas, etc., and understanding how acts result from motives, disposition and affect from environmental experiences. He designates by "reactive psychosis" the abnormal reaction of a stationary abnormal constitution to psychic influences and, later, returning to its normal, as distinguished from a productive psychosis in which progression with only partial regression occurs. Every psychiatrist has often seen patients who illustrate this distinction. One example will suffice:

A. D. was a young girl brought up in a very strict household. She was forbidden many of the pleasures of her friends, such as dances and theaters. During her school days, she met the brother of a schoolmate, to whom she became attached. He was very worldly, and displeasing therefore to her mother. Forbidden to go with him, the daughter stopped

⁵ Jaspers: *Zeitschrift fuer die gesammte Neurologie und Psychiatrie*. Originalien. Vol. XIV, Part 2, p. 138, 1913.

⁶ Also Bleuler, *loc. cit.*, who separates a reactive from the productive type of dementia præcox.

⁷ Hinrichsen: *Zentrallblatt fuer Psychoanalyse*, Vol. III, Part 8-9, May, 1913.

eating and cried incessantly, and in a few days became incoherent and distracted when she would speak, which was not often. She would hide under the bedclothes or resist attempts to view her, became inattentive to her toilet and surroundings and developed automatic movements. With changed environment this psychogenous attack subsided within a few weeks. The next month was utilized to instruct both parents and daughter, and in the four years since this has happened no further attacks have occurred.

Either hysteric or schizophrenic is hardly appropriate to such an episode and I would prefer to regard it as a reaction to an experience in the sense which Jaspers uses it. "It is immaterial," as he puts it, "whether such a reactive psychosis occurs with a psychopath, a schizophrenic or an organically diseased individual. The variability of the reactions depend primarily upon the psychic constitution of the individual upon the nature of the psychic experience and upon the structure of the reactive states." It would seem, therefore, that in addition to the progressive type of dementia præcox with deterioration and with the attacks occurring without any connection with exogenous factors, that clinically we cannot ignore a reactive type with recovery without noticeable deterioration and with unmistakably psychogenetic etiology. A reactive type in this sense as a part of the dementia præcox group would not be recognized by many. Some seem to regard non-progressiveness and non-deterioration as irreconcilable with dementia præcox. To the writer, however, the psychogenous psychoses cannot always be separated clinically from the dementia præcox group in the beginning of the attacks.

Bleuler's study of autism and of negativism as a distaste reaction with its two divergent impulses from the normal type through the hysteric to the schizophrenic, is a great help in making this clear. The separation by Kraepelin of the paranoid form of dementia præcox from the other types as paraphrenia, is a very acceptable one to me because it helps to make more understandable the tendencies of Kraepelin to consider clinical symptoms as entities without endeavoring, as does Bleuler, to delve into the mechanism of their origin. To the former the loss of the finer feelings, of shame, of pity (*Zerstreuung* and *Stumpfheit*), etc., is the keynote of the disease; to the latter, *Sperrung*, *Spaltung* and *Autismus* represent the important conditions. His conception is a wider one and tends to connect all the psychogenous diseases

with schizophrenia rather than to separate them as does Kraepelin. Likewise, it allows, therefore, for recoveries or rather readjustments.

Bertschlinger⁸ formulates this very neatly in asserting that the symptoms in dementia præcox types vary with the mode of onset of the breakdown, and the nature of the adjustment that ensues directs the course of the disease.

Adjustment according to him marks the beginning of recovery and may result:

1. By a process of belated sublimation.
2. By a process of desymbolization, *i. e.*, sub-conscious thoughts being brought into accord with the facts of external reality.
3. By a transfer of the complex (temporary recovery).

Adler's⁹ attempt to formulate a broader conception of psychic mechanism in the psychoneuroses includes a fundamental principle which relates to the dementia præcox types as well. Adler regards the effort not to feel inferior, to rise to the level of his companions, an important influence in determining the psychic life of an individual. He lives in this way mentally an unwholesome life, represses everything which does not enable him to act out his purpose. There results an inability to recognize the real; bizarre impulses and actions, as well as ideas, result. Constitutional inferiority of function is, therefore, the basic factor which causes efforts of psychic compensation around which are woven phantasies and motor reactions and which causes stimuli to arise in an effort to develop compensatory increase or hypertrophy of function. This even more than Bleuler's conception of autism reminds one of Janet's descriptions of *perte de la fonction du réel* and of his sentiment *de incompletude*. It is a psychic factor which often occurs, but is a result and not a cause, and not a universal one either.

Adler's hypothesis again brings out the factor of reaction to environment as one which cannot be ignored. Psychic reactions do occur from repressed desires and result in true and secondary actions; the latter occurring as symbols or as sublimation. All psychic life is, however, "not deterministic nor need there always

⁸Bertschlinger: Dementia Præcox: Allg. Ztschft. fuer Psychiatrie. LXV, 1911, pp. 209-222.

⁹Adler: Den Nervösen Character. Bergman, 1912.

be an unconscious connection between the symbolic expression and the complex."

With Jaspers we can conceive of this as an "as if" or out-of-consciousness connection, *i. e.*, understandable but not explainable. A reactive psychosis fulfilling the wish complex of the individual develops, therefore, from experiences in life, subjectively shows itself through the manner of content, phantasies, verbigerations, mannerisms, etc., and points the way to mechanisms and personality alterations ejected from consciousness and yet influencing the individual, depending upon his make-up whether psychopathic or schizophrenic. The two cases I have cited illustrate the occurrence of reactions from environmental experiences upon a schizophrenic background. Such reactions are not spontaneous or continuous, are deterministic in origin¹⁰ and may recede, leaving the patient practically as before. Only the psychology of Freud and Bleuler can explain such types. There still remains, however, among the dementia præcox group, those types which have no environmental factors as a causal influence, but in whom chemical, pathological or genetic causes are alone at play. These are the true types of Kraepelin's dementia præcox, the origin of whose symptoms the future must clear up.

DISCUSSION.

DR. WM. A. WHITE.—I was very much pleased to hear Dr. Mayer's paper. There was one thing suggested by Dr. Mayer's paper and also by Dr. Hoch's paper, and which should be emphasized; that is the question of our attitude towards this class of patients; whether the time has not arrived when we can take a more optimistic view as to the future of these cases. There are two extremes; one is known as the reactive type, of which Dr. Mayer has spoken, and the other the constitutional type. The reactive types complex lie near the surface and so are more capable of removal. Many of our præcox cases get well, and they belong to the reactive type. The constitutional types are productive and deteriorating and the therapeutic outlook is much worse; and yet with the constitutional types something can be done, and something happens whether we do anything or not. It is a matter of observation that those cases who do not get well in the hospital automatically go down to lower levels and when they get to a level at which they are capable of making an adjustment, there they will stay. We should always bear in mind that every patient presumably has a level at which he can get along and live at considerable ease, and so an effort should be made to fit an environment to him, so to speak.

¹⁰ K. Jaspers; loc. cit. Practically abstracted.

RECENT TRENDS IN THE PSYCHOPATHOLOGY OF DEMENTIA PRÆCOX.

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The evolution of the conception of dementia præcox furnishes one of the most interesting chapters in psychiatry. The modern ideas concerning a special deterioration psychosis which usually reaches its culmination or complete development at puberty or adolescence has been the result of a slow evolution, which reached its culminating conception in Kraepelin, whose successful attempt at unifying these various disease pictures, which terminated in dementia, must ever be considered as one of the triumphs of sound clinical observation in psychiatry. The name dementia præcox was first suggested by Pick, although some years previously under the name of katatonia, Kahlbaum had described a puberty-psychosis associated with special muscular symptoms and rapid mental deterioration. In the editions of Kraepelin's "*Lehrbuch der Psychiatrie*" previous to the sixth, dementia præcox was classified under the special category of disorders of metabolism, in common with myxœdema, cretinism and dementia paralytica. Further observation, however, led to a breaking away from this traditional conception and gave to the disorder a special generic grouping, although with a somewhat artificial sub-classification into three different types of the disease. At first the disease was interpreted as a profound disorder of the cortex, and only partially recoverable. More recent advances, however, have led to a considerable modification of this anatomical conception. I refer particularly to the condition described as "allied to dementia præcox," to the partial or complete recoveries or the remissions in the disease and to the marked improvement that may be noted in early cases through a complete psycho analysis, which procedure lays bare the unconscious disturbing complexes. These results would be impossible if the disease were due to actual physical changes in the nerve cells of the cortex.

One of the most prominent riddles of the entire condition lies in the fact that the symptoms of the disease frequently develop

parallel with puberty. At first this led to a vague conception that perhaps the basis of the disorder might be an autointoxication from sexual products, a view which was later demonstrated to be utterly erroneous. In addition, dementia præcox frequently shows many features strongly resembling hysteria, such as the delirious episodes, the irrelevant replies to questions, stupor, vasomotor disorders and peculiar disturbances of consciousness. Many of the features of katatonic stupor resemble hypnosis, a phenomenon which led Evenson to conceive dementia præcox as due to a narrowing of the field of consciousness, thus making its mental mechanism correspond to the current French view of the psychogenesis of hysteria. On the other hand, from the standpoint of autointoxication from ductless glands, there is occasionally seen, particularly in katatonic stupor, an enlargement of the thyroid gland, rapid pulse and a myxœdematous thickening of the skin, features strongly resembling hyper or hypothyroidism. However, the indifferent results of thyroidectomy in dementia præcox speak strongly against the disease having any connection with perversions in the secretion of the thyroid gland. I was able to demonstrate a few years ago that intestinal toxic products through absorption, are unable to produce the disease, as the hyperindicanuria so frequently found in the akinetic states of dementia præcox was merely an index of the accompanying intestinal torpor. In fact, when by the use of intestinal antiseptics the indican diminished to normal or almost completely disappeared, no parallel improvement took place in the symptoms of the disease. The chemical examination of the cortex in cases of dementia præcox has likewise yielded nothing of value, at least so far as bearing upon the etiology of the disease process.

Various theories have been proposed concerning the pathogenesis and psychogenesis of dementia præcox, from vague statements of a special predisposition at puberty, especially in cases with an hereditary taint, the hazy autointoxication concept, and, finally, the psychopathological theories. It is with these latter that this paper is particularly concerned. The chief feature in the evolution of the conception of the disease process has been the change from the general clinical view, with prognosis as its chief criterium, to the modern individual psychological analyses.

Probably the most important question in contemporary psychi-

atry is the nature of dementia præcox, that is, the genesis of the disease process. Studies of the cortex, particularly by the French and certain of the German school, are of interest from a histological rather than an etiological standpoint. More recently the disease has been interpreted as a functional process or an inadequate biological reaction, from the standpoint of either an experimental or a dynamic psychology. In addition psychoanalytic methods have penetrated more deeply than was before possible into the mechanism of the disease process, the origin and evolution of the hallucinations, delusions, the so-called emotional apathy and the negativistic phenomena.

Thus there have arisen two camps in the interpretation of dementia præcox: on the one hand, the neuropathologists who sought to trace the condition to an anatomical basis and on the other hand, the psychopathologists who interpret the disease as an inadequate biological reaction, due either to internal (sometimes unconscious) ideas or to external experiences. This latter conception, which has proved to be so fruitful in the elucidation of the mechanism of hysteria and other functional neuroses, has yielded results of great value when applied to the more complex and more inaccessible mental state of dementia præcox. This change in the conception of the disease has been a gradual one, due for the greater part, to the universal application of certain Freudian mechanisms. At first, following the lines of the older psychiatrists, we were satisfied with broad clinical concepts. Yet these concepts, as formulated particularly by Kraepelin and Wernicke, were of immense value for an understanding of the evolution of the general disease picture. More recently, however, individual psychological analyses has been applied to the isolated clinical symptoms and these analyses have furnished the chief data for a more complete understanding of the mechanism of the condition.

Histopathology has demonstrated certain changes in the cortex in cases of dementia præcox, such as satellitosis, atrophy of the association neurones, perivascular infiltration and increase of lipoid substances in the nerve cells. Alzheimer even claims that he can differentiate histologically between katatonia and mania, because the katatonic cortex shows characteristic ameboid glia cells, while these are absent in manic conditions. As a rule dementia

præcox brains show no gross anatomical lesions, while in a few rare cases, particularly in the very acute disease processes with rapid death not due to somatic complications, an apparently normal brain has been proven to be microscopically abnormal, the so-called brain-death (Hirntod in Alzheimer's sense). The histological findings in Hirntod disappear rapidly, and furthermore, the findings may be totally obscured by any concurrent somatic ailment. If these histological changes in the Hirntod are so characteristic for dementia præcox, why is it that they are not more stable and found in more brains, and why do they disappear in chronic cases (where surely they would be most marked), or in cases complicated by severe somatic disturbances? In dementia paralytica, which may be taken as a type of an organic mental disease, the histological findings are invariable in the acute or chronic stage of the disease, in those having a rapid or a slow course, and furthermore, they suffer little or no change by the somatic complications and infections (pneumonia, convulsions, septic processes from decubiti) to which the paralytic dement is especially prone.

This brings us to the crux of the entire question; as to whether or not there is any organic basis to such a disease as dementia præcox, whether these organic changes are primary or secondary in nature and whether they can in any way explain the clinical pictures. The histological findings in the acute, uncomplicated dementia præcox cases (the Hirntod), have furnished no proof as to whether these findings *cause* the disease or are merely fatigue changes due to the katatonic restlessness. It appears, then, that one can never hope for a satisfactory pathological anatomy of dementia præcox, until we invariably find in this disease a uniform cortex picture, such as can be easily demonstrated in the frankly organic mental disorders, such as dementia paralytica, senile dementia, sleeping sickness, amaurotic family idiocy or the fever psychoses. So far as I am aware, this parallelism between structure and function has not been demonstrated in dementia præcox, and therefore, for an adequate interpretation of the disorder we must direct our attention to psychopathology. Certain chromatolytic cell changes which I was able to demonstrate in some cases of dementia præcox, were by no means constant or pathognomic, but were the terminal changes of a central neuritis. This axonal

reaction, in connection with the clinical symptoms of a central neuritis, I was able to find in six cases of dementia præcox.

Both dementia præcox and hysteria show phenomena pointing to a profound mental dissociation. But why a mental dissociation should cause a curable hysteria in one case and an incurable dementia præcox in another, cannot be definitely decided at present, but certainly the difference does not lie in any special cell changes in the brain.

Evenson found a close analogy between some of the prominent symptoms of dementia præcox such as negativism, stereotypy, peculiar attitudes and the reactions of a normal person who has become preoccupied by one thought. He offered the suggestion that the essential features in both the preoccupied individual and in the katatonic were due to a narrowing of consciousness around a central content, and, furthermore, that there existed a close analogy between hypnosis and katatonic stupor.

Bernstein interprets the muscular tension in katatonia as due to a psychomotor disturbance and points out that it must be distinguished from the hypertonicity dependent upon pyramidal tract disease. Vogt also interprets dementia præcox due to a narrowing of the field of consciousness. Gross states that the disease is a dissociation of mental activity and is the expression of a split-off chain of psychophysical processes not related to the conscious personality and therefore escaping introspection. Masselon interprets all the symptoms of dementia præcox as due to a diminution of attention.

Adolf Meyer has pointed out that the disease develops only in those individuals who showed a long-continued and unhealthy biological adjustment and who meet their difficulties in an inadequate manner, and he insists upon the abnormal make-up of those individuals who later develop dementia præcox. In elaborating his psycho-biological hypothesis he points out that the disease is very unlike general paralysis and that the type of deterioration is essentially different. Dementia præcox is due to a conflict of instincts or rather conflicts of complexes of experiences and an incapacity for a harmless constructive adjustment. It is pointed out that this conception of dementia præcox may have a distinct prophylactic value, in that, in some cases at least, the dangerous constellations can be pointed out in time.

August Hoch, as a result of individual psychological analyses, has shown that in dementia præcox as well as in certain paranoic states, the condition develops only in those of a peculiar mental make-up, namely, what he terms the "shut-in personality." In certain analyzed cases, it could be determined that the psychosis represented conflicts and reactions of conflicts which overgrew and developed at the expense of the main and well-adapted interests of the personality. The mechanism of a wish fulfillment and of a shunning of anything which tends to bring up the main trend, is quite common in dementia præcox. This shunning-mechanism explains many of the negativistic phenomena of the disease.

Jung's valuable study is the result of several years clinical work on dementia præcox and gives a logical explanation of the behavior and utterances in this disease, which were formerly interpreted as strange and at random. The rich psychological results embodied in this monograph are certainly a healthy reaction from the vague autointoxication theories and the barrenness of pathological anatomy. In no other disease, outside of hysteria, have purely psychological investigations yielded data of so much importance. There is submitted to a searching analysis the essential psychological features of dementia præcox along the lines of the association studies. The most striking new feature of the work is the tracing of the evolution of individual symptoms and explaining their origin from the unconscious, rather than to interpret these symptoms as strange, inexplicable behavior, the result of the lack of judgment and the primary apathy of the disease.

Careful analyses of the mental state of many dementia præcox cases will show a peculiar blocking of thought and a dissociation of the inner mechanism for will and action. But why one case of mental dissociation should produce hysteria and another dementia præcox, is the crux of the whole question and furnishes a valuable theoretical and practical field for study. This important point Jung has attempted to answer.

In hysteria, the emotional activity has not ceased, but is merely suppressed, while in dementia præcox there is a strong inhibition of the emotions, hence, in the latter disease, the striking emotional apathy. This emotional apathy is superficial, however, for in those dementia præcox patients who are accessible to analysis,

it can be demonstrated that the emotions exist in a latent but very active form in the unconscious. Jung states as following concerning the emotions in dementia præcox: "That the affects in dementia præcox are probably not extinguished but only peculiarly transposed and blocked, we see on rare occasions when we obtain a complete catamnestic view of the disease." In both diseases the essential mental undercurrents may be laid bare by studying the associations to a series of test words and taking the reaction time, thus forming what Jung calls "complex indicators," indicating that the test word is closely related to some hidden complex, frequently of an erotic nature. Many of the random replies in both hysteria and dementia præcox are due to a disorder of the mechanism of association. The complex is frequently symbolically expressed, a symbolism which is best seen in dreams. In fact, there is a striking analogy between the mechanism of dreams and the actions of a dementia præcox patient. As Jung expresses it, "The psychological mechanisms of dreams and hysteria are most closely related to those of dementia præcox. A comparison with dreams is therefore not too daring. In dreams we see how reality is spun with fanciful creations, how the pale memory pictures of the waking state assume tangible forms and how the impressions of the environment adapt themselves to the sense of the dream. The dreamer finds himself in a new and different world which he has projected out of himself. Let the dreamer walk about and act like one awakened and we have the clinical picture of dementia præcox." When the underlying complexes control the entire mental life we have dementia præcox, when they merely lessen the amount of energy at the disposal of the patient, we have hysteria. Thus there exists a close relationship between dementia præcox and hysteria, especially in the various symbolic manifestations of the unconscious complexes. However, Jung is very conservative concerning his psychological origin of the disease, and states, "The mechanisms of Freud do not reach so far as to explain why there originates a dementia præcox and not a hysteria: hence it must be postulated that for dementia præcox there is a specific resultant manifestation of affects (? toxins) which causes the definite fixation of the complex by injuring the sum total of the psychic functions. However, the possibility cannot be disputed that the 'intoxication' may appear

primarily from 'somatic' causes and seize the accidentally remaining complex and change it pathologically."

In 1904, Stransky brought forth the ingenious theory that the fundamental disorder in all cases of dementia præcox was a loss of what he termed the inner unity between the understanding and the will. Especially characteristic was the altered relation between the disturbance of understanding and the corresponding states of affect, so that there arose a sort of sejunction in the sense of Wernicke. To support this theory, Stransky gave a lengthy analysis of a case of dementia præcox, which presented many katatonic features. In brief, this case showed the following disturbances. The patient, who was arrested for petty larceny was at times stuporous, the talk and writing were scattered, he showed shallow and superficial associations, while the actions were clownlike and childish, with an automatic repetition of the movements of others. Attempts to use objects ended in an aimless fumbling resembling apraxia. There was no outward emotional expression, while indecision and helplessness were marked. It was the aimless hesitation in the use of objects and in the execution of orders together with the emotional dullness which furnished a typical example of the loss of the inner unity of the mind or intrapsychic incoordination.

In reviewing this case Stransky pointed out, that while the subject seemed to understand many complicated things, yet on the other hand he was quite simple in manner. From the very beginning, the most prominent disturbance was in the inner unity of the mind, and yet in spite of the prominent superficial apathy, there was no absolute emotional dullness, an observation in harmony with the experimental results of the galvanic and pulse reaction tests. The most marked features of the case were the aimless and senseless hesitation and the peculiar irrelevant execution of actions. For instance, when the patient was given a key and told to unlock a door, he placed his fist upon his abdomen, looked under the mattress and finally went through aimless manipulations with the key, without, however, carrying out the requested act.

There was not an absolute loss of inner unity, but a difficulty and uncertainty in the harmonious workings of all the mental processes. It is this which explains the capriciousness of cases of dementia præcox. Therefore, according to Stransky, dementia

præcox consists, first, in a poverty or superficiality of emotional reactions, and secondly, in an incoordination or ataxia between the emotions and the ideas in consciousness. The disease process is consequently something more than a mere deterioration of the emotions since, indeed, the latter, on close analysis, are found not to be deteriorated at all, but active, though latent, and merely split off (dissociated) from their corresponding ideas. According to this theory, there are two psychical groups, the *noopsyche*, which comprises all intellectual processes and the *thymopsyche* which comprises all effective processes. In a healthy mind these act side by side harmoniously and in unison. As soon as incoordination takes place, there is no longer any unison between ideas and their corresponding affects and therefore the condition known as *dementia præcox* arises. Unfortunately, unlike Jung and Bleuler, Stransky has no hypothesis to offer concerning the origin or mechanism of this dissociation of consciousness. In hysteria the same mechanism takes place, but here the motive can usually be determined by means of psycho-analysis. In *dementia præcox*, however, on account of the peculiar blocking of thought, except in some cases, accessibility to analysis becomes very difficult.

These peculiarities of speech and action have more than an ingenious theory of a kind of a dissociation of the inner mechanism for will and action to support them. The exact experimental work of Stransky on speech disorders throws considerable light upon the entire concept. According to these experimental investigations, when there exists a lack of harmony or ataxia between ideas and their corresponding affective processes, there results a superficial stream of thought or superficial associations resembling a flight of ideas. This is particularly liable to take place when the attention is relaxed. In Stransky's experiments, when normal subjects in a state of relaxed attention were requested to make associations at random, without paying attention to what they said, the productions bore a striking resemblance to the speech productions in cases of *dementia præcox*. In other words there were numerous repetitions, stereotypes, shallow associations and newly formed words and jargon, a kind of a superficial scattering of thought.

Several of my cases of *dementia præcox* presented interesting examples of these superficial speech productions. One, for in-

stance, would suddenly grab a pencil and paper and write meaningless, disconnected words, like "cat," "Hebrew." Another patient spontaneously produced sentences like the following: "China and a flaxon pretty hand—South America—Plutus keeps pretty hard for Alladin. I am Rupert of Hentzau. I speak as if in a polyshone I am anæsthetic and I said it was a question always at the point of a needle." Another patient, when pressed for a reply to a certain question, would say "I don't care to answer—talking-violent-disease-application—literature—word, deed and action to the place." The resemblance of these productions to condensations and neologisms occurring in dreams is certainly striking.

Unfortunately this theory explains only one aspect of the subject, namely, the emotional indifference and the lack of harmony between ideas and affects. It does not explain the bizarre conduct of dementia præcox patients, the psychogenesis of their delusions or hallucinations or the mechanism of the dissociation, which has been so well done through the psycho-analytic investigations of the Zurich school (Jung and Bleuler). The basis of dementia præcox Stransky believes to lie in an organic disease of the brain, because of the frequent accompanying cyanosis, œdema, increased reflexes, disturbances of pupillary reaction, epileptic attacks, etc. Urstein accepts this theory of intrapsychic ataxia, but believes that the process is caused by certain organic changes in the deeper layers of the cortex.

Bleuler's work is very important for psychiatry, partly because of his broad conception of what constitutes dementia præcox, much broader than in the usual Kraepelinian sense, and partly because of his admirable symptom-analyses. The disease, according to Bleuler, has varied clinical manifestations which frequently take the type of different nosological entities, such as paranoia, the psychoses arising on the basis of a psychopathic inferiority, certain manic-depressive reactions, the prison psychoses and the acute hallucinoses. For him every functional psychosis belongs to the dementia præcox group. This is a rather revolutionary conception, since the trend of modern psychiatry has been to narrow the dementia præcox group, rather than to widen it, as Bleuler has done. His conception is a dynamic one and he maintains that all degrees of transition may exist, from the latent state,

which seems to be merely an abnormality of make-up, to very acute psychoses with varying clinical manifestations. Great emphasis is laid upon the psychological aspect of the disease, although certain somatic symptoms are not over-looked, yet these, as in hysteria, are interpreted as having a purely psychological mechanism, a theory derived from certain psychoanalytic data.

Dementia præcox or schizophrenia is defined as a group of chronic psychoses, with outbursts or remissions, each case showing a more or less clear splitting of the personality and disturbances of associations, but without primary disturbances of perception, orientation or memory. As a sign of the deterioration, we find hallucinations and delusions, confusion, dreamy mental states, manic and depressive emotional fluctuations and katatonic symptoms. The disease is divided into four different forms:

1. Paranoia, with hallucinations or delusion formation in the foreground of the disease picture.
2. Katatonic.
3. Heberphrenic.
4. Simple schizophrenia.

The emotional deterioration stands in the foreground of the disease picture, but sometimes this indifference is hidden by euphoria, anxiety or depression. The shutting within themselves and the lack of contact with the outer world is called autism and seems to correspond to Freud's auto-erotism, Janet's "*perte du sens de la realite*" or Hoch's shut-in personality. The schizophrenic deterioration is characteristic and seems to relate to certain complexes or constellations only. A change of character, either during or after puberty, often marks the beginning of the disease process. This change in character is often of the neurasthenic or hysterical type. A small percentage (about 1 per cent) of schizophrenics die of the disease process, such as convulsive attacks, acute brain swelling or Hirntod. The symptoms at the beginning of the disease bears no relation to the severity of the prognosis.

The mechanism of the disease is a primary dissociation, and this dissociation stamps the entire symptomatology. In many cases there is an unsuccessful attempt to escape from certain complexes which are mostly sexual in nature. Thus the disease is a dissociation of the personality. If the disease process is pro-

nounced, the personality loses its unity, the psychic complex breaks up into fragmentary ideas and the concepts lose their composition. It is this latter process which explains the scattering of thought, which is so frequent in advanced cases of dementia præcox.

Bleuler divided the symptoms into two types—the fundamental symptoms which are present even in the mildest cases of schizophrenia, such as a disorder of the association process (dissociation), and the accessory symptoms such as katatonic states, delusions and hallucinations. It is impossible, within the limits of a paper, to describe all of Bleuler's theories in detail. The original publications must be consulted. However, he has emphasized the psychogenic origin of dementia præcox and believes the pathological anatomy has little or nothing to offer in explanation of the disorder. He says, for instance, "The exact schizophrenic process is unknown. Anatomy shows a slight brain atrophy and certain histological changes. The meaning of these findings is unknown."

Most important is Bleuler's theory of the disease, with particular reference to what he terms ambivalence, the schizophrenic splitting of the psyche and autism, all of which are types of the frequently found schizophrenic negativism. For him katatonic tonus, as a true motor symptom, is very questionable, thus breaking away from the traditional conception of muscular negativism as a condition allied to the various myotonias. Concerning this, he states, for instance, "I have learned to know negativism only as a psychic phenomenon, with its expressions governed by ideas not by anatomical conditions. Also I have been able, up to now, to localize the motor phenomena of schizophrenia only in ideas, although obliged to assume that one of the predisposing causes lies outside the psychic area. In negativism there exists an instinctive tendency to conceal the complex." "That the negativistic repelling very often bears the outspoken stamp of the erotic must be due to a root of the negativism being in the sexuality. This is very easily understandable. The sexuality has normally a strong, negativistic component; it shows itself clearest in the opposition of the female against the sexual approach, which we find in animals and also in man, when the sexual act is desired. We know that there is no case of schizophrenia in whose complexes sexu-

ality does not play a prominent rôle, and very often the repelling is founded in sexual delusions, the patients believing themselves loved or violated." Of course these data can only be obtained through a psychoanalysis. I have under my care at present a case showing dementia præcox reactions in which the analysis has demonstrated many of these unconscious sexual mechanisms, some of them clear, some appearing in symptomatic actions and others in a highly disguised and symbolized form in the dreams. Many of this patient's symptoms have disappeared as a result of the psychoanalytic treatment. Thus dementia præcox frequently shows a mechanism of unsuccessful defence, in which the unconscious complexes completely overpower and dominate the conscious. Sometimes the source of these unconscious ideas is unknown to the subject—and since these are usually of a sexual or erotic character, the unsuccessfully repressed material dominates consciousness, so that patients develop the most curious delusion formations to explain the origin of ideas whose source is unknown to them. For instance, one of my patients referred her sexual ideas to telepathic influence, whereas a psychoanalysis demonstrated that these ideas (an *Œdipus-complex*) had long lain dormant in her unconscious from early childhood. The dementia præcox reactions arise like hysteria and the obsessional states, from the repression of painful memories (usually sexual) into the unconscious and the delusion formation and hallucinations, and even the autistic shut-in personality, is predetermined by the content of the repressed material. The apparent dulling of the emotions in dementia præcox is due merely to the dominance of the ruling complex and the development of the autism. Thus in the etiology of dementia præcox as well as in hysteria, many Freudian mechanisms enter, whose origin can be revealed only by a complete psychoanalysis, either through the association tests or through the analysis of the dreams, since the latter frequently reveal the ruling complex in a disguised and symbolized form.

The data furnished by the psycho-galvanic tests and by my demonstrations of the pulse reactions in dementia præcox, have shown that the emotional apathy on which so much stress has been laid is merely superficial. These tests, as well as the dream symbolisms, demonstrate the presence of unconscious, latent

but active complexes. The emotions are unconsciously quite active in this disease but are dissociated from their corresponding ideas and hence cannot be made use of by the subject. The presence of emotional complexes can also be clearly demonstrated by the association tests. When we come to study the mechanism of the disease, these technical methods must be used for individual analysis and one must not rely entirely upon the data furnished by the anamnesis and the clinical examination. The trend in the psychopathology of dementia præcox seems to show that we are dealing with a dissociation of conflicts or of emotional experiences. With these data in mind and with the establishment of the functional nature of the disease, the prognosis becomes more hopeful. I feel that in the future, in the early cases, at least by means of the data furnished through psychoanalysis, we may be able to devise a rational psychotherapy for the disorder, the same as has been done for hysteria or for certain paranoic states, particularly types of limited delusion formation.

BIBLIOGRAPHY.

- A. Bernstein: Ueber die Dementia Præcox. Allg. Zeit. f. Psychiatrie, 1903.
- G. Bleuler: Dementia Præcox oder Gruppe der Schizophrenien, 1911, The Theory of Schizophrenic Negativism, 1912.
- Isador H. Coriat: Certain Pulse Reactions as a Measure of the Emotions. Jour. Abn. Psychology, Nov., 1909. The Symptom-Complex of the Central Neuritis. Jour. Nervous and Mental Diseases, May, 1909. Recent Literature on the Pathology of Dementia Præcox. American Jour. Psychology, April, 1905. Some Observations on the Elimination of Indican, Acetone and Diacetic Acid in Various Psychoses. Am. Journal Insanity, 1902.
- H. Evenson: Dementia Præcox, 1903.
- K. Goldstein: Zur pathologischen Anatomie der Dementia Præcox. Arch. f. Psychiatrie, 1910.
- O. Gross: Zur Differentialdiagnostik Negativischen Phänomne. Psych. Neurol. Woch., 1904.
- C. G. Jung: The Psychology of Dementia Præcox, 1909.
- R. Masselon: La Demence Precoce, 1904.
- Meyer, Jelliffe, Hoch: Dementia Præcox, 1911.
- S. T. Orton: A Study of the Brain in a Case of Katatonic Hirntod. Am. Jour. Insanity, April, 1913.
- E. Stransky: Ueber die Dementia Præcox, 1909.
- R. Vogt: On the Psychophysiology of Negativism. Centralblatt. f. Nervenheilk. U. Psychiatrie, 1903.
- M. Urstein: Dementia Præcox, 1909.

A PROPOSED CHANGE IN THE CRIMINAL LAW.

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For several years past physicians in New York State interested in the problems relating to insanity have received from the Committee on the Commitment and Discharge of the Criminal Insane of the New York State Bar Association requests for replies to interrogatories, copies of the committee's reports, and circular letters relating to a proposed change in the criminal law, which would provide that when a jury is satisfied that a person charged with homicide committed the act while insane, the verdict shall be "Guilty but insane" instead of "Not guilty by reason of insanity" as at present. This would in effect incorporate the existing provision of the English law.

The literature of the committee is interesting and informing, and a few references to the reports and letters mentioned will serve to make clear its position regarding this proposed change, especially in relation to the legal points involved. An interrogatory regarding the definition of insanity indicates that the committee's opinion is that it is like fraud, elusive of precise definition, but that as without defining fraud we are still able to say whether a given act is or is not fraudulent, so we may by certain acts and speech prove that a person is insane; but that notwithstanding this fact the question of a man's insanity as generally passed on in the courts has been confused by refinements which would be shown to have no materiality if the inquiry were directed with this fact regarding the definition in mind. Other opinions expressed or implied are that society has no basis for punishing crime other than that crime is an offense against the public weal; that in the case of the indictment of a man for murder, whose defense is insanity, there is no need for a change in the statutory definition of murder, to wit: the killing of a man with intent to kill him; that the whole trouble in the administration of the criminal law in respect to the insane has grown out of a judge-made definition of insanity rather than the statute-made definition of crime; that

if the proposed change in the law were adopted, those who do violence or other injury, where mental aberration results in unconsciousness of the act in question, would be amply protected against injustice; that in a just administration of criminal law there would be no more stigma on a man or his family by reason of a verdict of guilty but insane than would result from a verdict of not guilty by reason of insanity; that the criminal insane should be cared for apart from the non-criminal insane and the sane criminal, and that the question of continued incarceration should be directed solely to the likelihood of a recurrence of the disorder, this to be determined not as a question of right under habeas corpus as now, but as one of mercy on application for a pardon.

Homicide is defined as the killing of one human being by the act, procurement or omission of another, and is murder, manslaughter, excusable homicide, or justifiable homicide. Murder in the first degree is the killing of a human being, unless it is excusable or justifiable, when committed from a deliberate and premeditated design to effect the death of the person killed or of another.

In the further comment the committee says: "If a jury finds in a given case of homicide that there was no deliberate intent to kill, it may acquit or find a less degree. It can do so as well in the case of the insane as the sane. The trouble is that it has always been assumed that an insane man cannot have any intent, whereas experience has proved the reverse. No sane man has any right to dogmatize as to the intents of the insane. They are inferable from their acts equally with those of the sane. A drunken man is not excused on the ground of lack of intent. An angry man is not excused because he was so angry that he did not know what he was about. . . . A verdict of guilty but drunk would not be illogical. A verdict of guilty while in a fit of anger, which lessened the defendant's self-control, would not be illogical. . . ." The question is not whether an insane man intended to commit a crime but "did he intend the result which came about?" and the report continues: "If on all the evidence the jury finds that the person, whether sane or insane, had no such intent, let them acquit. But if they find that he had the intent, let them convict; and if they also find that he was insane at the time but that his insanity was not of a character to affect his intent . . . let them add that he was insane."

Attention is also called to the following: That insanity is not made the ground for the confinement, but that it is the fact that the defendant killed another with intent to kill him that is the reason for his detention, so that he shall not again be allowed to be a menace to the community; that the objection that the proposed change is unconstitutional falls to the ground because there is nothing in the constitution about the insane man and no insane man has a constitutional right to kill another; and that there is no proposal to be lacking in tenderness or to withhold mercy, and no suggestion that the jury cannot acquit an insane man as well as a sane one.

With the objections hinging on legal points answered by the statements of the committee, we may proceed to consider a little more at length the questions of intent, and the treatment of the criminal from the standpoint of social utility. As the committee's report states that the principal reason given by members of the medical profession for opposing the proposed change in the law is the conviction that an insane person is incapable of criminal intent, this view will be especially considered, and I may state by way of explanation that in making a few suggestions relating thereto and to the questions of responsibility and the effects of discipline, I have in mind the general bearing the facts and opinions set forth may have on the question of the proposed change, which far from contemplating the holding of the criminal insane equally responsible with the sane and punishing them accordingly, does on the contrary especially contemplate caring for them humanely in accordance with present day standards, in a suitable special institution under medical administration.

I will disclaim any intention of discoursing upon the old time topic of monomania or partial insanity or of discussing at any length the questions of free will and determinism but if I suggest these topics my object is rather to call attention to prevailing conditions among criminals, sane and insane, and to certain conceptions of which we may all be aware but which are not always accorded due weight, these points appearing to me to be relevant to the subject of the proposed change in the law.

I believe that those who have had the opportunity for continued observation of criminals, habitual and occasional, sane and insane, are coming more and more to feel that in many respects the pres-

ent-day treatment of criminal cases is far from scientific. I make this as a general statement not as one applying simply to a few cases where the consensus of opinion may be that justice has miscarried. The question which arises is, would not the results be far better and the ends of justice be better served if, instead of attempting to determine in each individual case the precise degree of responsibility existing, and the exact punishment, if any, warranted or required, criminal cases were conducted on the basis of society's right to protect itself, and the greatest resultant good.

Considering the subject of criminal intent in its relation to the insane, in the light of prevailing law and opinion, may we not question the soundness of the premise that it is impossible for an insane person to act with criminal intent? Just what is meant by this assertion? If in all cases of insanity reason were completely dethroned and the alienation such as to unquestionably absolve from all responsibility, the statement might stand unchallenged, but we know that such is not the case. Continued observation of the criminal insane warrants the statement that there are many of the more active among them who, though deranged, react to most of the occurrences of every day life, and commit crime from the same motives as do individuals of the same class who are sane.

Let us consider, for example, the case of a patient with whom the writer has had to do for some fifteen years. A man sixty-three years of age, keen, alert, active, capable; a most interesting character, alive to the events of the day, interested in the political problems of the state and nation and affairs generally; a man who has harbored for years certain absurd delusions but who seldom refers to them except to his older acquaintances among the medical officers and employees of the hospital. This man is a capable farmer, a good mechanic, and an expert horseman. He is of more value to the institution than many of the employees and shows not the slightest indication of mental deterioration except as the impairment of judgment which allows him to accept his delusions as real might be so considered. Otherwise his judgment seems unimpaired, and it is a fact that it is a difficult matter to place an employee at work with him without having the patient, by mere force of character and superior mental ability, assume charge and direct the activities of the employee, with the latter's

more or less unconscious acquiescence. This patient's opinion is sought freely by officers and employees on the various matters with which he is familiar. His reactions to most of the occurrences of every-day life are, so far as observation can determine, as sane as they well could be. Nevertheless, he is unquestionably insane. Now if in so many of the relations of life those who have known him intimately and observed him closely for years are unable to find that his insanity enters at all, in fact, if our observation amounts to anything and we are to base our opinion on the evidence of our senses, such is the case, why must we assume that if he should commit crime (and he once did), the act would of necessity be affected by his insanity? That such a man might commit crime as the result of his derangement no one would of course deny, but if a careful weighing of all the evidence shows sane motive and no other, and the criminal act is manifestly not one due to lack of self-control in the ordinary meaning of the term, why should we disregard the evidence and decide the case on the theory that because the man harbors certain delusions his seemingly sane reactions, if associated with a criminal act, must of necessity be affected by the insanity, and that he is incapable of criminal intent? In other words, is there a mysterious relation existing between insanity and criminal acts which is obliterated when the act ceases to be criminal, so that an insane person who performs a multitude of acts from the same motives as would have moved him to similar activities when sane, cannot, by any possibility, commit crime under the same circumstances and from the same motives as might have caused the same reaction during sanity?

For another example let us take the class responsible for the uprisings and outbreaks in institutions for the convict and criminal insane. While here again there is, of course, no question but that such men may and sometimes do commit crimes as the result of their mental derangement, it is nevertheless a fact that the uprisings referred to are planned and carried out just as they would be by the same class of sane convicts in prison. When the plotting is overheard or brought to light and the participants are interviewed repeatedly and at length, it is the rule that nothing is found connecting any of the motives with the insanity of the patients concerned. In fact, I cannot recall a single instance of

the nature I have in mind where such connection could be established.

Regarding this assumed absence of intent, Maudsley writes as follows: "The medical doctrine by which monomania is held to exclude criminality is founded mainly on three considerations: first, that the delusion might be concealed, wherefore it might be overlooked, although it had actually affected the conduct; secondly, that it is impossible to follow the workings of an unsound mind and to discriminate between a healthy and a morbid action thereof . . . ; and thirdly, that it is impossible to isolate an insane delusion and thus prevent the infection of its morbid nature from spreading."

Now conceding that the existence of an insane delusion may denote an affection of judgment and that "its foundations are not laid in reason," and giving due weight to the considerations just quoted, we can have some understanding of the attitude of those who state that an insane person is incapable of criminal intent. But admitting the truth of the statement that it is impossible to follow the workings of an unsound mind and discriminate between a healthy and morbid action thereof, may it not be contended with equal logic that it is also quite impossible to follow the workings of any mind and fix the precise degree of responsibility for resultant acts, and that while the infection of a delusion, concealed or apparent, may spread, there is in many cases nothing to suggest that it has, and that in such event we could not by any possibility demonstrate that it had; so that notwithstanding the necessary limitations of the mental examination and the possibility of concealment of delusion or the spreading of its infection, we should not allow mere theory, incapable of demonstration, to outweigh to too great an extent facts which have been established, but should settle questions having important practical bearing to society in accordance with the tangible evidence and on the basis of social utility.

As germane to the subject, let us consider the effects of reasonable discipline when applied to the criminal insane, the necessity for which is oftentimes so persistently deplored by those who allow a mistaken sentiment to outweigh judgment. In fact, may it not be that it is this sentiment which has as much to do as well-thought-out opinion in influencing some who object to the

proposed change in the law? In the main, the nature of this discipline is not unlike that enforced in the case of children in the school-room, and it is probably less rigid than is enforced with our young men at Annapolis and West Point. In some respects it is little more than a request for good order and attention, made in an effort to teach the patients, who need the lesson, respect for the rights of others. The patients are expected to take their seats when a medical officer enters the ward. This of necessity to eliminate danger and also to facilitate the transaction of business. In a limited number of cases seclusion in a well-lighted, heated and ventilated room is necessary, as it is in hospitals for the civil insane, though with the criminal class, the homicidal cases more especially, this seclusion is sometimes necessarily of longer duration. A few other reasonable disciplinary measures are required. What is the effect of this moderate discipline? Without hesitation I can state most emphatically that it is beneficial, of much therapeutic value, and aids materially in not a few cases in bringing about a return from insanity to sanity and from a disorderly to an orderly life, and barring the isolation, which is complained of less than one would suppose it would be, I fail to recall a single instance where a patient has complained of such discipline as too rigid, and this in a population where the criminal mind, acted upon by persecutory insanity, causes a certain class of patients to complain unreasonably of about everything that can be thought of regarding which a complaint could be made.

Would not, then, the change suggested by the Committee of the Bar Association, in a sense be giving this same idea of wholesome discipline for the protection of society and the benefit of the individual a little wider application? And if we are to deplore the sad facts of life, should we not in this matter go to the foundation and deplore the very existence of crime and insanity instead of lamenting the need for salutary discipline with the criminal insane, the absence of which in the lives of these unfortunate individuals has contributed so much toward the development of the criminal tendencies and the ultimate insanity?

I make these suggestions advisedly, realizing that if, for example, a gentle and refined woman should become insane and reacting to a delusion of divine command, murder her children, it would be a case to excite pity, and that the imposition of a sen-

tence would seem to be an injustice and the words "guilty" and "pardoned" inapplicable. I am convinced, however, that such cases would be amply protected against injustice. My experience would indicate that while not a few insane persons are tried, convicted and sent to prison, their sanity never having been questioned, cases of the character just described are seldom even carried to trial, as either the verdict of the coroner's jury or some other procedure results in the commitment of the individual to a civil hospital as an ordinary insane person or to Matteawan as a court case.

In our study of sane criminals we are forced to admit that they are in the main the victims of circumstances and cannot be other than as they are. Recidivists are comparable to the incurable insane, as with them reformation is quite impossible and would necessitate an actual re-formation along lines suggested by one of our old paranoiacs, who when writing to public officials regarding the new order of civilization he contemplates establishing, states that he would so regulate society that human beings would be properly formed in their formatories instead of attempting the impossible task of re-forming them in re-formatories.

Criminologists are practically of one opinion regarding habitual offenders. They are the victims of heredity, faulty training, and bad environment, and are so lacking in moral sense that in many instances years of painstaking effort on the part of competent instructors fails to develop any ability to really comprehend what the instructor is attempting to inculcate. It may be said that these men are not normal. With this I agree, but we may question the normality of most men who deliberately commit crime, and there are, of course, many of this class who could not be held as insane. Nevertheless, as a matter of absolute justice, would it not seem that such unfortunates are as much entitled to consideration on account of inability to control their conduct, or because of lack of knowledge of right and wrong, or even because of absence of criminal intent, as are many of the insane? In reality they are helpless, but no one would on this account propose to absolve them from all accountability to society and acquit them and liberate them where the commission of a criminal act had been proved.

The literature of insanity and criminology is not lacking in statements of opinion akin to those here expressed. Ellis, com-

menting on the fact that under existing practice it is considered a matter of much moment whether a criminal is insane or not, states that it is largely a matter of definition, and that even with the best definition we must often be in doubt in a given case as to whether or not it is applicable; that practically it cannot make the slightest difference whether the criminal is sane or insane, as he is in either case a menace and society must be protected from him, and it is our duty to treat him humanely and adopt such measures as will best serve to make him capable of living a social life; that it is unreasonable and anti-social to speak of insanity as a "defense," as it is an explanation but not a "defense," and if we accept it as a "defense" we are directly encouraging every form of vice and crime, because we are removing the strongest influence in the formation of self-control. He relates that when a "defense" of kleptomania was brought before an English judge in a case of theft, he is said to have observed, "Yes, that is what I am sent here to cure," and adds that we need not hesitate to accept this conception of the function of the court, provided always that the treatment is scientific, effectual, and humane.

Now if we go still further and accept the reasoning of the determinist, we find that our charity toward offenders must be extended to include all humanity, as we admit that no individual can at any given moment react to his environment and the multitude of causes acting upon him, other than as he does; and we must then agree with Locke that "it is as insignificant to ask whether man's will be free as to ask whether his sleep be swift or his virtue square." But this is not fatalism, and absence of moral responsibility does not furnish exemption from social accountability, and because of his conviction that all acts, including volitions, are caused and cannot in any instance be otherwise than as they are, the determinist does not reason that effort is useless and social reaction against crime futile. On the contrary, all efforts and methods included in such reaction may become causes acting to determine future behavior, and the determining causes of crime may be discovered and in a measure, at least, removed. We will then accept conditions as we find them but will labor to make them better, and by causing our treatment of the offender to be determined on the basis of social utility, it will tend to become rational

and scientific and a spirit of optimism and charity will replace that of vengeance and retaliation still so much in evidence.

There are benefits which would result from such a change in the law as is now proposed, other than the one the committee has in mind. We all agree that the insane, civil or criminal, should receive care and treatment in suitable hospitals under medical supervision, but it is a fact that many insane persons who have committed criminal acts are convicted and sent to prison, where they not infrequently remain for months, or in some cases years, before the derangement is discovered. There can be little doubt but that this undesirable state of affairs results not alone from lack of systematic inquiry as to the mental condition of accused persons, but also to a considerable extent from the disinclination on the part of jurors, always prone to believe that malingering is far more common than it is, to give reasonable consideration to the question of insanity in cases where it is not of such character as to be immediately evident to the layman. With the law amended so that acquittal would be impossible when the commission of the act was proved or admitted, the suggestion of the possible existence of insanity would have little tendency to arouse the suspicion in the minds of the jury that the accused was feigning, and thorough inquiry and careful consideration of all phases of the question would oftener result. I am convinced, however, that one of the most important results of the change would be the step forward toward a more scientific treatment of all criminal cases.

I believe, then, that our attitude, everywhere, toward such a change in the law as has been suggested should be a liberal one, and that we should not, if the results of such a change would be for the better protection of society and the more scientific treatment of all criminals, be too academic in our consideration of this question of intent; and that bearing in mind the many difficulties which beset us when we attempt to consider the question of responsibility in any case, we should not lose sight of the fact that society's right to protect itself is its justification for the adoption of all necessary efficacious and humane measures in its reaction against crime.

DISCUSSION.

DR. MACDONALD.—I merely wish to say a few words upon a single point in the printed abstract of Dr. North's most interesting paper.

It is a popular notion of the day that the plea of insanity—the so-called "insanity dodge"—is frequently successfully used in the defense of sane criminals, and while it is true that a trumped-up defense of insanity is frequently offered in criminal cases in which there appears to be no other avenue of escape, the fact is that a dishonest plea of insanity very rarely succeeds, such cases as a rule being unmasked and convicted by the aid of medical experts. In an experience of more than forty years, during which I have appeared as an expert witness in thousands of cases in various states and countries, but more often, of course, in the state of New York, I have known but few instances where medical men have lent themselves to a dishonest plea; on the other hand, I have known of many instances of insane persons charged with crime being convicted and sentenced to prison for want of preliminary examination and recognition of their mental condition. So that it may safely be said that the danger to the cause of justice that is supposed to lurk in the insanity plea is grossly exaggerated. The public loses sight of the outcome of these trumped-up cases and erroneously assumes that when such a plea is offered, it usually succeeds, whereas nothing could be wider of the truth.

As to whether a lawyer is ever justified in defending a client on the ground of insanity when he knows said client is perfectly sane, is an ethical question which may properly be left to the legal profession.

DR. WM. A. WHITE.—In regard to the recommendation of the Bar Association, I would say that a person who is insane is legally irresponsible because insanity is a legal and not a mental concept. This is a matter that I think is worth while bringing to the attention of this association. My idea is that there is no such thing as insanity except as a purely legal concept. We know that the brain is not *an* organ which suffers from a disease—insanity, but a tremendous number of organs enclosed in a very small space, each one intimately communicated with the others. There are at least fifty separate organs, and the brain and the mind may suffer from innumerable kinds of disease, but there are only certain kinds sufficient to render a person insane.

DR. FRANK WOODBURY.—I am in entire accord with the writer of this paper. It seems to me that the difficulty hinges on one word—"guilty"—which implies moral claim where there can be no responsibility on account of the condition of the mind. The English Parliament in 1883 passed a special act covering this point, which provides, as nearly as I can give it, that when a person is charged with murder and it is found at the hearing that the person was insane, the trial shall stop at that point and an investigation made as to whether the patient was in condition of mind which would permit him to be held responsible for the act. If it is found that he is insane and not responsible, then the verdict shall be recorded that

he committed the deed, but was insane at the time he committed the act, and, that verdict being found, the judge of the court makes the proper disposition of the case by sending him to a suitable institution to be detained at the pleasure of the court. It seems to me that this is a step far in advance of what we have here. In our state of Pennsylvania we have a verdict of "Not guilty because insane," and then commit the person to a custodial institution for detention, as if he were actually guilty.

DR. NORTH.—I merely wish to say in closing that I do not disagree with the last speaker. No doubt some other term could replace the word "guilty," if that word is objectionable. The idea is to put the treatment of the criminal on a scientific basis; on the basis of social utility, which would result in the best possible solution of the problem. After an experience of fifteen years with criminals, sane and insane, I feel convinced that this would be, for the reasons already stated, a most decided step forward.

THE OCCURRENCE OF MILIARY PLAQUES IN SENILE BRAINS.

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We are familiar with many of the physiological and pathological changes which occur in the brain and vascular apparatus as old age advances. The mental disorders which accompany these regressions fall into two large groups, the senile disorders and the arterio-sclerotic disorders.

Senility is dependent upon the physiological involution which comes to all sooner or later, beginning soon after the completion of the normal growth usually at the end of or during the fourth decade.

The senile psychoses and the arterio-sclerotic disorders grade away from normal senescence in various combinations. To quote Lambert: "When physiological involution anticipates in time or exceeds in direction, extent, and severity normal senescence, the various senile and arterio-sclerotic disorders are the result."

The parenchyma or working tissue of the organs is the first to deteriorate. The parenchyma of the brain is no exception to this rule and the dementia in senile cases is generally in proportion to the parenchymatous degeneration. The brains of aged individuals show reduction in weight; the convolutions are atrophied and the sulci are correspondingly widened; focal atrophies may occur; the ventricles are dilated and there is usually an excess of fluid in the thickened pia-arachnoid. The nerve cells show varieties of acute and chronic alterations, and many of them show pigmentary degeneration; they are reduced in number. Neuroglia reactions are evident in the form of increased nuclei and thickened feltwork. Corpora amylacea are found in the molecular layer. Arterio-sclerosis may be added; then small wedge-shaped softenings extending into the cortex result from involvement of short cortical vessels. If the process is more purely arterio-sclerotic focal lesions result from involvement of known vessels or systems.

With these changes we have for some time been familiar. During the last three or four years, however, attention has been redirected to certain circumscribed foci of tissue alteration frequently found in small or large numbers in the cortices of brains of some senile cases. These microscopic foci are now commonly known as miliary or senile plaques and many conflicting statements are made regarding their origin and significance.

Some of the plaque history and literature is here briefly reviewed. The presence of miliary plaques in senile brains was recognized as early as 1892 by Blocq and Marinesco, and again in 1898 by Redlich, who designated the condition as miliary sclerosis and believed it to be a glial reaction following destruction of ganglion cells. These miliary areas were generally circular in outline and varied in diameter from that of a ganglion cell to a diameter 4 or 6 times as great as such a cell. In 1904 Alzheimer described plaques in senile brains and again in 1906 he described them and associated them with a peculiar intracellular neurofibril degeneration which has since been named after him. In 1906 Dunlap described foci of necrosis in the cortex of the majority of cases of senile dementia with or without arterio-sclerosis. They were designated as pin-point foci of necrosis or senile bodies, consisting of centers of necrotic granular material with a few fusiform nuclei arranged radially in their peripheries, and occasional fat granule cells in or near them. In 1906 Leri advocated a plaque foundation for epilepsy. Fischer in 1907 designated plaques as "Drusige Nekrosen" and could find them only in cases of presbyophrenia. A little later after examining over 100 cases of various psychoses he ascribed to them a bacterial origin and thought them to be characteristic of presbyophrenia only. Achucarro in 1909, using Cajal and Bielschowski methods, described small plaques which occurred very frequently in senile brains but did not express an opinion as to the changes leading to their formation. In 1909 Oppenheim found plaques in the brain of a man dying at the age of 77 without psychosis, Mijake having already described them in senile cases not clinically insane, and since then Alzheimer and Fuller have reported cases dying without psychoses in whose brains were found abundant plaques. In 1910 Barrett, and in 1911 Betts and Fuller reported series of senile cases in which plaques were found. In 1912 Hauptmann described the plaques as he

demonstrated them by a modification of the Levaditi stain for spirochætæ of syphilis in tissue. Within the last year Fuller has reviewed the published reports of a class of atypical senile dementia cases referred to by some as Alzheimer's disease and by others as presenile psychosis and has reported the clinical and anatomical data of one such case. Miliary plaques were prominent in their histopathology. Cases of manic depressive psychoses, alcoholic dementia, arterio-sclerotic disorders, and epilepsy showing plaques have been reported.

Alzheimer's intracellular neurofibril alterations in the ganglion cells of the cortex of senile and presenile brains have been brought into more or less prominence by the search for plaques. Alzheimer describes the condition thus: "In the interior of an otherwise apparently normal cell one or more fibrils, on account of increased thickness or impregnability, stand out prominently. Following this initial change many of the fibrils of the same cell running side by side are changed in the same way and are welded together to form a thicker and more darkly stained bundle which gradually comes to the surface of the cell. At last, the nucleus and interfibrillary protoplasmic substance of the cell disappear completely and only a bundle of fibrils wound into a snarl remains where before was a nerve cell."

It is the purpose of this paper to add the findings in 36 plaque cases to the already abundant plaque literature in an effort to establish a more definite histopathology for senile psychoses and other deteriorations of the senile or presenile period.

The brains of 93 elderly persons dying insane, and of 23 younger persons with a variety of psychoses have furnished the material for this paper. All of the cases came to autopsy at the Binghamton State Hospital.

The 23 younger cases included dementia præcox, general paralysis, manic depressive psychoses, alcoholic psychoses, undifferentiated depression (with central neuritis), traumatic psychoses, epilepsy with insanity, psychoses accompanying chronic internal hydrocephalus, presenile psychosis, and imbecility with insanity. With but one exception, the presenile case, no plaques were found in these cases.

Of the 93 elderly cases, *i. e.*, above 60 years, 35 presented plaques. The 58 elderly cases whose brains failed to demonstrate

plaques included senile psychoses, dementia præcox, allied to dementia præcox, epilepsy with insanity, manic depressive psychoses, alcoholic psychoses, psychoses accompanying cerebral arterio-sclerosis, general paralysis, undifferentiated depression, paranoic condition, imbecility with insanity, and unclassified cases.

ABSTRACTS OF CLINICAL HISTORIES AND AUTOPSY FINDINGS IN 36 PLAQUE CASES.

CASE I.—J. D., No. 561, male, laborer, 62 years of age, intemperate. Family history is negative for nervous and mental disease except that his father was alcoholic. Until his 60th year there is no history of physical or mental debility. At about that time mental and physical failure began to be apparent and for one year prior to his admission were rapidly progressive. He became dull, apathetic and indifferent; sat in one place day after day; had difficulty in dressing himself, getting his clothes on wrong; strayed away from the house and could not find his way back.

On admission, a man past middle life; well nourished; gait extremely unsteady; tremor of lips, tongue, jaw, hands and legs marked; knee jerks exaggerated; ankle clonus on both sides; weakness of left internal rectus; muscular coordination poor; pupils reacted normally; speech thick; results of examination for cutaneous sensibility unsatisfactory, patient did not cooperate; but the tactile and pain senses were apparently intact; skin circulation was sluggish, hands and feet being cold and cyanosed; lungs clear; cardiac dulness extended $4\frac{1}{2}$ inches left of mid-line, a faint blowing diastolic murmur in the third left interspace.

Mentally an orderly dependent patient whose conversation was irrelevant and incoherent and whose general mental attitude was characterized by indifference, unappreciation and dementia. He had difficulty in the formation and expression of ideas and replied only to simple questions. He was disoriented for time, place and person. Grasp on recent and remote past, retention and school knowledge were very defective.

His mental condition remained much as above throughout his residence in the hospital, physical condition failing steadily. Two days before death the patient was placed in bed on account of weakness. His symptoms were those of cardiac failure and beginning broncho-pneumonia.

Autopsy Abstract.—Brain 1200 grams. Chronic hypertrophic leptomenigitis over the entire cortex with adhesions between frontal lobes, some edema of pia, many small Pacchionian granulations along longitudinal fissure, vessels much thickened and show occasional yellow patches, convolutions all atrophic with widened sulci, brain substance soft, excess of cerebrospinal fluid; chronic endocarditis with aortic insufficiency; slight broncho-pneumonia; chronic interstitial nephritis; general arterio-sclerosis.

CASE II.—M. W., No. 565, a farmer, 79 years of age, with a negative family history for nervous and mental disease except that his father was said to have been peculiar. Naturally he was quick-tempered and talkative.

His psychosis began six or seven years before admission. He was then about 70 years of age. Memory defects became pronounced and gradually he became excitable, faultfinding and extremely suspicious. He developed persecutory ideas which were directed against his children, carried a loaded revolver saying he had been held up several times and had been advised to go armed. Occasionally he became depressed and foolishly jealous of his wife. Repeatedly he threatened to injure members of his family. Frequently he got up at night and wandered aimlessly about the premises. He was committed because he threatened to shoot somebody and "furnish three subjects for the coroner."

On admission, physical examination showed a poorly nourished old man with a kyphosis and a slight lateral curvature of the spine; some cardiac hypertrophy; marked arterio-sclerosis; pupils were small, equal, regular and reacted normally, vision somewhat defective; hearing slightly impaired; station and gait unsteady; ataxia of the finer movements; considerable tremor; deep reflexes exaggerated.

Mentally he showed some deterioration. He was voluble and rambling in conversation and only partially oriented. Shortly he regained his grasp on his surroundings. His general mental attitude was one of cheerfulness in spite of his persecutory ideas in regard to his wife and children. His memory for recent and remote past was poor. He had no insight.

During his residence in the hospital he retained his delusions of persecution; was inclined to ramble in conversation; was childish, forgetful and somewhat emotional. He was careless and untidy of his personal appearance.

He developed a retention of urine and was confined to bed. He was catheterized regularly for two days. After this he lost control of his organic reflexes and never regained them. He developed a cystitis and had a temperature ranging from normal to 103.6. For two weeks preceding his death he appeared exhausted and slept most of the time, but he was easily aroused and would speak when addressed sharply. No paralyses were noted. When questioned he would smile and answer the ward physician but his speech was thick and not readily understood. Several examinations of his urine revealed albumin each time.

Autopsy Abstract.—Brain 1340 grams. Chronic external pachymeningitis, chronic leptomeningitis, excess of cerebro-spinal fluid in ventricles, marked cerebral arterio-sclerosis, convolutions atrophic especially in frontal and occipital lobes, brain substance soft, a large encysted hemorrhage into the posterior limb of the right internal capsule also involving the lenticular nucleus and the optic thalamus, the contained blood was brown in color and apparently three or four weeks old. Chronic endocarditis; marked atheroma of entire aorta, iliacs, and peripheral vessels; infarct in middle of lower lobe of right lung, slight broncho-pneumonia; chronic interstitial nephritis with concretion in pelvis of right kidney; cystitis; chronic interstitial splenitis.

CASE III.—E. C., No. 568, a woman, 79 years of age, with a negative family history for nervous and mental disease. She enjoyed good health until her 76th year. At that time she had what was called "typhoid-pneumonia" following which she was in failing health and coughed considerably. Her mental condition showed a material change after her pneumonia. Her talk became incoherent and she would hesitate and stop in the middle of a sentence; she wandered about the house at night; slept poorly; became uncleanly in her habits; her memory for recent and distant past became very poor. Shortly before her admission she reacted to hallucinations of sight and made assaults upon her attendants without provocation.

On admission an extremely weak and feeble old lady, unable to walk or sit up in a chair, and showing physical signs of consolidation in patches in the lungs; pulse weak and irregular, and a loud blowing systolic murmur over the apex; considerable arterio-sclerosis.

Mentally she showed the symptoms of advanced deterioration; her memory was strikingly defective; her judgment nil; her conversation incoherent with a suspicion of paraphasia. On account of her physical condition no aphasia examination could be made. Disoriented for time, place and person. She became more feeble and her pneumonia increased. Her death occurred after a residence of 14 days in the hospital.

Autopsy Abstract.—Brain 700 grams. Chronic pachymeningitis, chronic leptomeningitis and Pacchionian granulations along the longitudinal fissure, edema of pia, cerebral arteries very nodular and have many yellow plaques, convolutions generally atrophic and sulci widened; chronic interstitial myocarditis; general arterio-sclerosis; lobular pneumonia; fatty liver; chronic interstitial nephritis; chronic interstitial splenitis.

CASE IV.—L. A. V. K., No. 848, a carpenter, 69 years of age, whose maternal grandfather was insane. His father died at the age of 75 of "paralysis." There is no other history of nervous or mental disease in his family. He used tobacco to excess and alcohol moderately throughout his life. Enjoyed good health until November, 1909, when he had an attack of "typhoid fever." The onset of his psychosis dates from this time. He was then 67 years old. He became confused; wandered away from home; slept poorly; began to react to hallucinations of sight and hearing; and developed persecutory ideas and was homicidal toward his wife and nephew. On account of his threats he was committed to the hospital.

On admission, a poorly nourished, aged, decrepit, bent man of medium height and build. Muscles beginning to atrophy; some tremor; tendon reflexes exaggerated; hearing slightly impaired; heart action rapid; moderate arterio-sclerosis; arcus senilis.

Mentally he was quiet and orderly, neat and tidy; evasive when questioned but rambling and incoherent in conversation. He was disoriented; had a judgment defect; memory for remote and immediate past entirely lost; retention poor; insight absent.

During his residence in the hospital he gradually deteriorated mentally. He became restless, confused, and somewhat resistive.

Three days before death the patient had a severe chill lasting about 20 minutes; his temperature rose to 105.4, pulse to 146, and respirations to 30. Physical examination of the chest revealed signs of consolidation in the right lower lobe. Cardiac failure, death.

Autopsy Abstract.—Brain 1400 grams. Calvarium very thin; chronic external pachymeningitis and a marked internal hemorrhagic pachymeningitis with considerable free blood, most marked over the left convexity and both temporal tips, chronic leptomeningitis and edema of pia, many Pacchionian granulations along longitudinal fissure, cerebral vessels greatly thickened, nodular with yellow and calcareous patches, frontal convolutions atrophic; chronic endocarditis; general arterio-sclerosis; lobar pneumonia; fatty liver; chronic interstitial nephritis; chronic interstitial splenitis.

CASE V.—J. C., No. 855, a man, 74 years of age, whose family history was negative for nervous and mental diseases except for one brother who was insane. He was married, a carpenter by trade, abstainer. Since the age of 68 he had shown symptoms of mental deterioration. For one to three years previous to admission he appeared dazed; would wander aimlessly away from home into the woods in the night-time; conversation was incoherent and rambling; he became excited and wrought up over trivial matters; took away tools and implements and could not tell what he had done with them; his memory became more and more impaired. He finally became profane and abusive; struck his wife and son; threatened to cut his wife's head off with a knife; and probably reacted to hallucinations of sight.

On admission, a poorly nourished old man with a slight kyphosis; station uncertain; gait shuffling and unsteady; tremor of fingers; organic reflexes uncontrolled; second aortic sound accentuated; pulse and heart rhythm irregular both in force and frequency; marked arterio-sclerosis. He was very stupid; completely disoriented; and amnesic.

During his two years and four months residence in the hospital he showed the usual symptoms of advanced senile dementia, disorientation, confusion, memory defect, extreme untidiness and filthiness in his habits, and restlessness at night.

In March, 1911, the patient had an attack of influenza and during April, May and June was in the hospital ward several times with chronic bronchitis. He became so feeble that it was necessary to keep him in the infirmary ward. A failing myocardium finally caused his death.

Autopsy Abstract.—Brain 1100 grams. Chronic external pachymeningitis, chronic leptomeningitis and edema of the pia, numerous Pacchionian granulations along the longitudinal fissure, cerebral vessels much thickened and with many yellow plaques, convolutions atrophied and sulci widened especially in frontal and occipital lobes, brain substance soft; chronic endocarditis, chronic myocarditis; general arterio-sclerosis;

pulmonary edema and hypostasis; chronic interstitial nephritis with cystic degenerations; chronic cystitis; large prostate.

CASE VI.—L. D. C., No. 857, a man, 74 years of age. Paternal grandmother died of "shock"; father was alcoholic; mother was insane one year prior to her death; one brother is a patient in this hospital. There is no personal history of nervous or mental disease until the onset of this psychosis at the age of 71 while he was an inmate of an almshouse. The onset was characterized by insomnia, wandering aimlessly about, irritability, confusion especially at night and rambling, disconnected conversation. For a few months immediately preceding his commitment he became rapidly worse. He became more noisy at night and threatened to cut the bowels out of the other inmates.

On admission, a well nourished, fairly preserved old man; slight ptosis of right eyelid; completely blind in right eye due to a scar of the cornea; general impairment of motor functions owing to old age; some tremor; deep reflexes slightly exaggerated; moderate arterio-sclerosis.

Mentally he was childish, elated and talkative. His conversation was irrelevant and incoherent and he was disoriented. He had hallucinations and a marked judgment defect. His memory for the immediate past was entirely lost, for the remote past poorly retained; he had no insight into his condition.

The above was his mental condition throughout. In August, 1911, the patient sustained a subcoracoid dislocation of the left humerus following which he remained in bed the greater part of the time until his death, 6 months later. He failed slowly but progressively, and because of a marked incoordination it was necessary to spoon-feed him after Jan. 1, 1912.

On Jan. 24, 1912, he developed a purulent discharge from the left ear and became much weaker. His temperature rose to 104 and there was considerable spasticity of all of the extremities but no paralyses. He was unable to speak. This condition cleared up completely in a few days. At no time was there tenderness about the mastoid. On Feb. 7 he had a slight chill, became semi-comatose, pulse was irregular and weak; T. 101, P. 96, R. 30. Examination revealed a partial paralysis of the left side of the body, spasticity of the leg and a flaccidity of the arm; the right side of the face was partially paralyzed; he had much difficulty in swallowing. On the next day paralysis was complete on the left side and there was no sensation. An ankle clonus and a patellar clonus were present, but no Babinski. Deep reflexes on the left side were exaggerated, superficial reflexes absent; the left pupil did not react to light. Death, Feb. 9, 1912.

Autopsy Abstract.—Brain 1480 grams. Calvarium thin. Chronic external pachymeningitis, chronic hypertrophic leptomenigitis and edema of the pia, cerebral vessels much thickened, beaded and have many yellow plaques, atrophy of the lower anterior central and frontal convolutions, old softening involving the cortex and marrow in the lower half of the right prefrontal, the right angular and the left occipital convolutions

forward to the internal parieto-occipital fissure, some lacunar softenings in the left lenticular nucleus; chronic interstitial myocarditis, chronic endocarditis; advanced general arterio-sclerosis; pulmonary congestion and edema; fatty liver; chronic interstitial nephritis with cystic degenerations.

CASE VII.—J. H. Y., No. 862, a farmer, 75 years of age, whose father was an epileptic. He was a man of fair habits and cheerful disposition. In his younger years he was a periodic drinker but never had delirium tremens or any hallucinatory episodes. Many years ago he was thrown from a wagon and received a slight injury to his spine. Had typhoid fever, pneumonia and rheumatism many years ago. No other accidents or illnesses. The change in his mental condition is said to have taken place about four years previous to his admission to the hospital, at which time he began to show loss of memory; he was a little depressed, and at times wandered aimlessly about and was not able to do any work.

His mental condition gradually grew worse and four weeks prior to his admission he became very active; moved furniture about the house; thought that he was driving cows and horses; was very excitable; tore his clothing; slept little at night; picked at the carpet and bed clothing; was profane and threatened to kill himself and his wife; he was very much confused.

On admission to the hospital, a poorly nourished old man showing well-marked senile changes; respirations 25 per minute; rales over bronchi and lower and middle right lobes; temperature 99; no cough; heart dulness increased to left and there was a mitral systolic murmur; arteries somewhat thickened; blood pressure 140; hearing slightly impaired; eyes normal; tremor of tongue and fingers; deep and superficial reflexes normal.

Mentally the patient was confused and restless; he was disoriented; had no appreciation of his surroundings; his memory, judgment and retention were much impaired; he was noisy and resistive.

On the second day after his admission he developed an acute diarrhoea from which he suffered for three days. This condition improved. His confusion increased steadily. One day before his death his respirations were hurried but his temperature was normal. Examination was difficult on account of the patient's continuous mutterings. A few rales were heard over his bronchi and right lung. About 10 hours before death there was considerable muscular rigidity with a slight twitching of the pectoral muscles and of the fingers; his legs were extended and his eyes were fixed. He died five days after admission.

Autopsy Abstract.—Brain 1280 grams. Some external pachymeningitis, pia much congested and very edematous, thickened and opaque, vessels all greatly thickened and with many yellow nodular plaques, excess of cerebrospinal fluid outside of the brain, convolutions atrophic in upper left central and in frontal and occipital lobes, no foci of softening; heart had atheromatous coronaries, hypertrophy of myocardium in wall of left ventricle,

mitral insufficiency; aorta and peripheral vessels very atheromatous; broncho-pneumonia; chronic interstitial nephritis.

CASE VIII.—D. C., No. 867, a widow, about 88 years of age. Nothing is known of her family or personal history. Her psychosis is said to have begun in her 75th year. At this time she spent the greater part of her time sitting around in grocery stores telling about her importance and about the property which had been taken from her. She annoyed all who came in contact with her by asking for money and property. She was noisy day and night.

On admission, at the age of 75 (?), she was in good physical condition. Mentally she was exalted and garrulous, had poorly systematized persecutory ideas. Early notes state that her condition was then one of terminal dementia.

During her 13 years residence in the hospital she was much deteriorated mentally. Her memory was poor; she was disoriented for time, childish, excitable and talkative; at times became fearful on account of her delusions. She gradually failed physically and was in bed on account of general weakness and failing functions for 5 months preceding her death.

Autopsy Abstract.—Brain 1018 grams. Dura very adherent to calvarium, pia thickened and opaque over vessels and sulci, vessels generally greatly thickened, very nodular and have many yellow plaques, all of the convolutions are atrophic and sulci are widened, especially marked in frontal and occipital lobes, left first and second temporal convolutions and temporal tip have largely disappeared owing to an old softening, a small old softening in the left postparietal, these softenings extend into the marrow but not deeply, a small old softening in the posterior part of the genu of the corpus callosum; chronic interstitial myocarditis; advanced atheroma of the aorta and peripheral vessels; fatty liver; chronic interstitial nephritis.

CASE IX.—S. W., No. 868, a woman, 71 years of age, who had one sister "mildly insane"; father was excessively alcoholic. Aside from a fall down stairs at the age of 67 when her head was cut slightly she has never had any severe traumatism or illness. She had been a woman of good habits and good morals; was the mother of 6 children, one of whom has been insane (type of psychosis unknown) for the past 14 years. Her psychosis was first noticed about one year previous to her admission at which time her memory began to fail; she was irritable; developed the idea that harm was coming to her; was destructive of her clothing and furniture and at times did not know the members of her own family; she became very noisy, active, profane and obscene.

On admission, a feeble old woman showing well-marked senile changes; she had a soft mitral systolic murmur; arteries showed considerable sclerosis; blood pressure 180; marked arcus senilis; severe diarrhoea; taste, smell and cutaneous sensibilities could not be determined as she was in a very feeble condition and her mental condition was such that she could not co-operate; marked tremor of tongue and fingers; deep reflexes normal.

Mentally she was noisy, restless, confused and resistive; did not appreciate her surroundings; was disoriented for time, place and person; her memory, grasp, judgment and retention were very poor.

During her residence in the hospital she presented the same condition as on admission. At times she was irritable and profane; she gave no evidence of visual or aural hallucinations; she refused food and had to be forcibly fed; the diarrhoea noted on admission continued for one week and so weakened her that she was compelled to remain in bed. She died suddenly 31 days after her admission.

Autopsy Abstract.—Brain 1300 grams. Pachymeningitis hemorrhagica interna over frontal, central, and parietal regions on the left side, pia was opaque and thickened and showed marked edema, vessels very thin with occasional yellow patches, focal softenings involving only the cortex in the second and third right temporal convolutions and the third left temporal, a small acute softening in the left angular gyrus; chronic endocarditis; marked atheroma of the aorta and peripheral vessels; chronic interstitial nephritis.

CASE X.—H. B., No. 870, a woman, 78 years of age, with a negative family history for nervous or mental disease. Her habits and morals had always been good. She had always been nervous. Had typhoid fever twice and pneumonia once many years ago; she is said to have suffered from epilepsy for many years but this statement has not been confirmed. Her psychosis is said to have come on about three months before her admission. She became nervous and her memory showed considerable defect. After a change of residence she became restless; threatened to commit suicide; threatened her husband's life; danced, sang and tore her clothing. She made attempts at suicide once by choking herself and once by taking poison; she threw dishes and furniture; at times she was much excited.

On admission, and old woman showing well-marked senile changes. Hearing was impaired; slight tremor of tongue and fingers; deep and superficial reflexes normal; heart enlarged to the left and the second mitral sound was replaced by a murmur; also a diastolic murmur at the mitral area, second aortic sound replaced by a soft blowing murmur; arteries much sclerosed; blood pressure 110; edema of feet and ankles; urine showed considerable albumin, many epithelial cells, hyalin and granular casts, a few pus cells and red blood corpuscles.

Mentally she was slightly depressed, dull, irritable, inclined to be uncommunicative; gave evidence of hallucinations of hearing; was disoriented; memory and judgment were very defective and she was much confused; she had little insight into her condition.

During her residence in the hospital she remained depressed, confused, at times mildly agitated and showed considerable mental deterioration. For some time she refused food and it was necessary to tube-feed her. Her physical condition failed steadily and she died 41 days after her admission.

Autopsy Abstract.—Brain 1200 grams. Dura thickened and adherent to frontal and parietal bones, pia thickened over sulci and much congested over left second frontal, lower ends of anterior and posterior central, and supramarginal gyri, considerable edema, vessels all thickened and have numerous yellow plaques, convolutions are atrophic in frontal and slightly so in central regions, brain substance soft; chronic endocarditis (mitral stenosis); aorta and peripheral vessels show advanced atheroma; small abscess in lower lobe right lung; chronic empyema of gall bladder with gall stones; chronic interstitial nephritis; perisplenitis.

CASE XI.—S. B., No. 429, a man, 65 years of age. Unfortunately we have no family or personal history except that his commitment paper states that he had shown periods of excitement. He had been in various hospitals for the insane for about 35 years. Early hospital notes state that he was quiet and orderly, dull, and much deteriorated.

On admission to the hospital, he was 61 years of age, poorly nourished, posterior curvature of dorsal spine, lungs normal, a blowing systolic murmur at cardiac apex.

Mentally he was much deteriorated, had no insight into his condition, was completely disoriented and had very poor memory for recent and distant past; he was untidy and careless of his personal appearance; talked and laughed to himself.

During his residence in the hospital (4 yrs. 4 mos.) his mental condition did not change materially. Two hours before his death while walking across the room he suddenly staggered and would have fallen but for assistance by a fellow patient. He became comatose; no physical signs of paralysis; temperature normal; pulse 100 and of good quality.

Autopsy Abstract.—Brain 1280 grams. Dura and pia normal. Vessels of base and smaller vessels nodular with yellow plaques; fine granulations in ventricles, some atrophy of frontal convolutions, acute softening of left temporal tip and of cortex of amygdala of cerebellum, medullary portion of left cuneate lobule entirely softened, the cortex being slightly involved but this not showing on the surface; chronic interstitial myocarditis, mitral insufficiency; aorta and peripheral vessels show advanced atheroma; congestion and edema of lungs; passive congestion of liver.

CASE XII.—E. M., No. 886, an unmarried woman, 53 years of age, laundress. There is no history previous to June, 1908, when she was sent to the City Home in N. Y. City. While there she tried to jump off a balcony; was melancholy and depressed; complained of a loss of memory. On admission to Manhattan State Hospital July, 1909, physical examination showed over-active reflexes, coarse jerky tremors of the tongue, slight degree of peripheral arterio-sclerosis, unequal pupils which reacted well. Lumbar puncture gave a negative reaction.

Mentally she was a little confused, childish and irritable, poorly oriented for time and place, did not appreciate her surroundings, memory poor for both recent and remote events; retention, grasp on general knowledge,

counting, calculation and reading and writing all poor. Insight lacking and judgment defective.

During her residence in Manhattan State Hospital and after her transfer to the Binghamton State Hospital in March, 1910, her mental condition did not change materially. In July, 1910, an abscess developed in the lower dorsal region. It gradually extended in circumference and depth and emitted a foul discharge. She failed steadily and died of exhaustion.

Autopsy Abstract.—Brain 1200 grams. Dura slightly thickened and adherent to the calvarium, chronic leptomenigitis over sulci and over first left frontal convolution, atrophy of the frontal, especially the left frontal, and of left angular gyrus, blood vessels show yellow nodules throughout, minute softening in middle of left lenticular nucleus, brain substance soft; hypertrophy of myocardium in wall of left ventricle, coronaries thickened; advanced atheroma of the aorta and of the peripheral vessels; chronic interstitial nephritis; uterus and ovaries atrophic; large abscess with several openings involving the skin, subcutaneous tissues and muscles in the lower dorsal and lumbar region.

CASE XIII.—A. R., No. 889, a widow, 62 years of age. No family history obtained as she was brought to the hospital from the County House. No personal history. Her psychosis is said to have developed at the age of 58; gradual in onset. She became violent and threatening; talked irrationally; wandered away from the house in the snow in her bare feet.

On admission she showed physical signs of senility; complained of occasional headaches and vertigo; poor musculature, coarse tremor of hands, unsteady gait and incoordination of old age; deep reflexes exaggerated, superficial normal; high-pitched mitral systolic murmur transmitted into axilla; arteries moderately sclerosed; edema of feet and ankles.

Mentally she was quiet, confused, wholly disoriented, unappreciative of her position, memory for remote and immediate past very defective, retention, grasp on school acquirements and current events, and calculation very poor; hallucinations of sight and hearing.

During her two years and three months residence in the hospital she gradually became more demented and failed physically. In the fall of 1911 she was so feeble physically that she remained in bed. Her urine contained albumin and casts. She finally developed a temperature, some evenings it reached 103.6. She exhibited a marked tremor in her extremities and in the muscles of the face and neck, the tremor in the extremities being more marked whenever any movement was attempted.

Autopsy Abstract.—Brain 1160 grams. Pia opaque over sulci, some Pacchionian granulations and thickening along the longitudinal fissure, edema over both frontal lobes, all vessels contain many yellow patches but there are no apparent occlusions of the lumen, frontal convolutions much atrophied and sulci widened, motor convolutions slightly atrophied, ventricles somewhat distended by clear fluid, no granulations, no softenings; hypertrophy of the myocardium in wall of left ventricle, myocardium very soft and flabby, coronaries beaded and calcareous, chronic endocarditis,

mitral stenosis and insufficiency; aorta and peripheral vessels very atheromatous; acute congestion of liver, 540 small gall stones; chronic interstitial nephritis; uterus atrophic; large cyst of left ovary containing clear straw colored fluid filled the lower left quadrant of abdomen.

CASE XIV.—W. E. T., No. 898, male, cooper, 78 years of age, moderately alcoholic. Father was alcoholic; one brother had an attack of "acute mania" from which he recovered; one sister had an attack of undifferentiated depression from which she recovered; another sister and a paternal cousin were said to have been insane but were never committed. He had always been well until the onset of his psychosis at the age of 78 when he worried much over the death of a friend. He became confused, slept poorly at night, developed delusions that his wife and others had robbed him, had hallucinations of sight and hearing, repeatedly threatened his wife and struck her. He fabricated freely.

On admission to the hospital he showed well marked senile changes, arcus senilis, marked arterio-sclerosis, blood pressure 175. He was weak, troubled by dyspnoea and somewhat cyanotic. Cardiac hypertrophy, mitral insufficiency, edema of feet and ankles. Urine showed albumin and granular casts. Muscles were flabby and showed fibrillary twitchings; coarse and fine tremors; and slight ataxia of movements of upper extremities.

Mentally the patient was confused; his answers were irrelevant; he took no interest in his new surroundings; was disoriented for time, place and person; his memory for recent and remote past was poor and he had no insight into his condition. A typical senile deterioration.

He died 17 days after admission. Compensation of his mitral insufficiency failed steadily. During his residence at the hospital there was no change in his mental condition.

Autopsy Abstract.—Brain 1420 grams. Thickened and adherent dura, edema of pia, cerebral vessels generally thickened with many patches of yellow atheroma even in smallest vessels, atrophy of frontal convolutions, lacunar softening in posterior part of left optic thalamus and left lenticular nucleus, softening of cortex of amygdala of cerebellum on each side; marked hypertrophy of heart, both ventricles dilated, chronic endocarditis with calcareous valves; advanced atheroma of all arteries; congestion and edema of lungs; passive congestion of liver; chronic interstitial nephritis; perisplenitis; chronic cystitis.

CASE XV.—M. C., No. 906, a housewife, 79 years of age. Unfortunately there is no family or personal history as she was admitted from the County Almshouse and had no known friends. She had lived in the almshouse $4\frac{1}{2}$ years and had been in good health. At 76 her first known psychosis developed. She became restless at night, talked loudly to imaginary beings, threatened to kill other inmates of the almshouse, removed her clothing in public places and was uncleanly in her habits. She was committed about two months after the onset.

On admission to the hospital she showed characteristic senile changes. She required assistance in walking (gait was shuffling); had a coarse tremor of the hands and poorly coordinated movements of the arms; arcus senilis; deep and superficial reflexes diminished; general arterio-sclerosis.

Mentally she reacted to hallucinations of sight and hearing; her memory for remote and recent past was very defective; she was disoriented for time, place and person; had no insight into her condition. She was confused and her answers to questions were often irrelevant.

During her residence at the hospital she was often restless and noisy at night in reaction to visual hallucinations; she frequently assaulted other patients without provocation. She would get lost on the ward; was untidy and often wet and soiled her clothing and bedding. She suffered frequent attacks of rheumatism and was confined to her bed for four months before her death by general physical debility. A few days before death she developed some temperature with corresponding pulse and respiratory rise. Temperature before death, 106.

Autopsy Abstract.—Brain 1180 grams. Dura thickened and adherent to calvarium, edema and congestion of pia over frontal lobes, vessels thin, fine granulations in fourth ventricle, convolutions atrophic in frontal and central regions; advanced aortitis; peripheral arterio-sclerosis; congestion and edema of lung and caseous bronchial lymph glands; gall stones; chronic interstitial nephritis.

CASE XVI.—J. B., No. 908, farmer, 79 years of age, with a negative family history for nervous and mental disease. His health is said to have been good until the onset of his psychosis at the age of 77. At that time his memory began to fail; he lost interest in his surroundings; developed persecutory ideas; was fearful; did not recognize members of his family. Mental and physical failure were steadily progressive. He finally threatened to kill his wife; became very active, was destructive of furniture and clothing; careless of lamps and matches and slept poorly at night.

On admission to the hospital he was feeble and poorly nourished; gait trepidant; coarse tremor of hands and legs; some ataxia; knee jerks absent, abdominal, elbow and wrist reflexes present; no ankle clonus; no Babinski. Cutaneous sensibilities normal; arcus senilis. Moderate emphysema; arterio-sclerosis with hypertrophy and endocarditis, a double mitral lesion, blood pressure 170; some cyanosis of lips, ears and extremities.

Mentally he was confused, restless, disoriented and amnesic. Evidences of aphasia were noted but owing to the confusion and restlessness it was impossible to carry out an examination.

During his 14 days residence at the hospital the patient exhibited the same symptoms as on admission. He picked at his bed clothing and frequently left his bed and rushed aimlessly about the ward. He lost flesh and strength rapidly. Failure of compensation of the heart lesion resulted in his death.

Autopsy Abstract.—Brain 1350 grams. Dura slightly thickened, pia thickened and edematous, vessels at base atheromatous, convolutions generally atrophied with widened sulci, most marked in frontal, lacunar softenings in left lenticular nucleus; chronic endocarditis of mitral, tricuspid and aortic valves; atheroma of aorta and peripheral vessels; liver infiltrated by firm carcinomatous nodules; chronic interstitial nephritis; carcinomatous new growth of tail of pancreas; a Meckel's diverticulum 18 inches above ileo-cecal valve.

CASE XVII.—A. D. B., No. 919, a farmer, 75 years of age. His father died at 70 from apoplexy. His mother was insane; one brother committed suicide at 20; another brother was twice a patient in the Binghamton State Hospital, once in a depressed attack and once in a manic attack, recovered each time. He is said to have always been "queer" but got along well with his associates. He is said to have had several attacks previous to the onset of the last psychosis but the time of their occurrence or their nature is unknown. The onset was rapid. He became restless, talked to himself, had hallucinations of sight and hearing and reacted to them; memory for recent events became poor. Finally he attacked a relative with a pitchfork.

On admission to the hospital, five days after the onset of the psychosis, his gait was somewhat unsteady: slight tremor of hands and tongue, incoordination of finer movements; arcus senilis, right pupil larger than left, both pupils irregular and failing to react to light; superficial and deep reflexes active; general arterio-sclerosis; some attacks of vertigo.

Mentally he was quiet and orderly, rather voluble, but had some difficulty in expressing himself. His memory for recent events was defective, better for remote past. He had a few poorly systematized ideas of a persecutory nature directed against his wife. Admitted seeing visions of Christ, with whom he talked. He was untidy and careless of his appearance and had vermin in his hair.

During his residence in the hospital mental deterioration was steadily progressive but slow. He was occasionally irritable and noisy but these attacks were of short duration (24 hrs.). He retained his persecutory trend and occasionally spoke of himself as Christ.

Four years and eight months after admission the symptoms of apoplexy suddenly developed one morning shortly after arising. He became unconscious, fell from his chair; had clonic convulsions of the extremities; face cyanotic, pulse slow and full; respirations slow and approaching Cheyne-Stokes type. He died in 2 hours.

Autopsy Abstract.—Brain 1380 grams. Dura thickened and adherent to skull, chronic leptomenigitis over frontal and along longitudinal fissure, cerebral arteries all greatly thickened, beaded and tortuous, some atrophy of frontal and occipital convolutions with widened sulci, a hemorrhage with tearing of brain tissue into pons opening into the fourth ventricle; cardiac hypertrophy, chronic endocarditis; general arterio-sclerosis of advanced type; chronic interstitial nephritis.

CASE XVIII.—M. L., No. 920, female, dressmaker, 85 years of age. No family or personal history except that two sisters were insane, types of psychoses unknown. She had been gradually failing physically for some months before the onset of her psychosis at 84 years. The onset was gradual. She became uncleanly; wandered about at night with a lighted lamp without a chimney, set fire to her clothing several times; did not eat sufficient food. Her memory and judgment became very poor.

On admission to the hospital, a poorly developed and nourished old lady presented. Gait feeble, slight tremor of tongue and hands, exaggerated patellar and plantar reflexes; marked arcus senilis; marked general arterio-sclerosis, blood pressure 150 mm.; taste, smell and vision impaired; cutaneous sensibilities retained; systolic murmur at apex of heart; urine contained albumin and pus.

Mentally she was quiet, amnesic and disoriented for time; had no insight and was inclined to fabricate.

During her 14 months residence in the hospital mental and physical failure were steadily progressive. Memory and judgment defects became pronounced. She fell several times while walking about the ward and finally came to spend most of her time on a couch because of general weakness and failing vision. Ten days before her death she fell from her couch and examination revealed a spastic paralysis of the left leg; two days later the left arm showed a flaccid paralysis while the left leg remained spastic. Both patellar reflexes were absent. There was no pupillary or facial paralysis. Bladder and rectal reflexes were soon lost.

Autopsy Abstract.—Left pupil larger than right. Brain 1080 grams. Dura thickened, pia very edematous, chronic leptomeningitis over frontal, left anterior central and along the longitudinal fissure, all of the cerebral arteries contain many yellow plaques and have thickened walls, convolutions are all atrophic with widened sulci, some pitting of surface of cortex, a large softening involving the right middle and inferior occipital and cuneus cortex and the underlying marrow cutting off the optic radiation, many lacunar softenings throughout the marrow and in the right lenticular nucleus; chronic endocarditis; general advanced arterio-sclerosis; small areas of broncho-pneumonia; chronic interstitial nephritis.

CASE XIX.—M. N., No. 932, widow of a farmer, 75 years of age. Satisfactory family and personal history unobtainable. One brother and one sister were insane, types of psychoses unknown. There is a history of three apoplectic attacks; two several years before admission (at about 70 years) and one during her 75th year. After her last "shock" her speech was affected and she became irritable, noisy and at times violent. She attempted to run away from home; moved articles of furniture about; walked about her home at night doing strange things. She finally developed persecutory delusions regarding property and threatened to kill those about her. Her memory and judgment were very poor.

On admission to the hospital an emaciated, weak, poorly developed, senile woman presented. She had some difficulty in speech and swallowing;

was very deaf; mitral insufficiency poorly compensated; marked arterio-sclerosis with blood pressure 160; arcus senilis; pupils irregular and unequal, varying from time to time, reaction to light sluggish; deep and superficial reflexes normal; albumin and pus in urine; a large hard tumor mass in lower abdomen.

Mentally she was much confused, disoriented, very amnesic, irritable and expressed some vague persecutory ideas. A satisfactory examination was impossible on account of her deafness and extreme physical debility. Three days after admission she fell and fractured the neck of her left femur. She failed steadily, developed pressure sores and died after a hospital residence of 41 days.

Autopsy Abstract.—Brain 1250 grams. Chronic external pachymeningitis, chronic leptomeningitis over frontal and lower central convolutions and along the longitudinal fissure, congestion and edema of the pia throughout, advanced atheroma of the cerebral arteries, convolutions generally atrophic most marked in frontal and central, an old brown hemorrhage into the entire length of the outer portion of the left lenticular nucleus extending into the anterior and posterior limbs of the internal capsule and involving nearly all of the external capsule; heart hypertrophied, chronic endocarditis; general advanced arterio-sclerosis; congestion and edema of lower lobes of lungs; chronic interstitial nephritis; purulent cystitis; calcareous submucous fibroid of uterus 5 inches in diameter.

CASE XX.—J. K., No. 936, farmer, 74 years of age. One son was insane, type of psychosis unknown. No other family history of insanity. At the age of 60, following a sunstroke, he developed a psychosis characterized by depression, a mild persecutory trend, poor memory for recent events but fairly good for remote past, subjective symptoms of vertigo, and he had a mild convulsion. It was necessary to commit him to the hospital. He improved somewhat and was discharged after one year. At the age of 67 he fell from a horse and mental failure was more pronounced. At 68 there was a marked memory defect, delusions of persecution and poisoning, confusion and homicidal attacks on a neighbor with an axe. He wandered about at night and was excited.

On his second admission to the hospital he had a lacerated wound on the left forehead and a scar over the right parietal eminence; was well nourished; station, gait, reflexes normal; coarse tremor of hands; general arterio-sclerosis; systolic murmur over aortic region; senile in appearance; complained of dizziness.

Mentally he was amnesic, confused and completely disoriented, and he had no insight into his condition. He expressed many poorly systematized delusions of a persecutory nature directed against his neighbors, and apparently reacted to hallucinations of sight and hearing. He fabricated freely.

His residence in the hospital was uneventful. He was a querulous old man with a poor memory. He frequently became excited when he would

talk volubly and occasionally assault. Mental and physical failure were progressive. He had glycosuria for over one year before his death. Death resulted from acute pyelonephritis.

Autopsy Abstract.—Brain 1240 grams. Chronic external pachymeningitis and chronic internal pachymeningitis hemorrhagica over both convexities and orbital lobes, chronic leptomeningitis, edema and congestion of pia, marked atheroma of cerebral vessels, convolutions generally atrophic, marked atrophy of frontal; chronic endocarditis, mitral insufficiency; marked general arterio-sclerosis; acute pyelonephritis of left kidney; acute purulent cystitis.

CASE XXI.—A. S., No. 943, female, aged 85 years. Unfortunately there is no family or personal history until she became an inmate of the Blackwell's Island Almshouse at the age of 63. At this time she expressed many persecutory ideas believing that she had been defrauded of money and reacted to hallucinations of hearing. Her manner was silly and childish; she was restless and wandered about gesticulating, talking and shouting at other inmates. She was admitted to Manhattan State Hospital in 1901. While there she was noted as demented, noisy and scolding at times, exhibiting delusions of persecution and reacting to hallucinations of hearing. Upon admission to the Binghamton State Hospital in 1905 at the age of 78 years, she was orderly, had persecutory delusions and scolded in reaction to auditory hallucinations. Physically she showed senile involution. Upon the wards she was usually contented to sit quietly in one place unless spoken to, when she would become irritable and would scold. She exhibited poorly systematized delusions of persecution. She was completely disoriented and gave fictitious names to the people about her. She conversed only in German. It was difficult to test her memory but there was an apparent memory defect which she filled in to some extent by fabrications. Her judgment was very defective.

After a residence in the hospital for 7 years during which time mental and physical deterioration were progressive, she died from chronic interstitial nephritis and mitral insufficiency.

Autopsy Abstract.—Brain 1150 grams. Chronic pachymeningitis, chronic leptomeningitis, marked atheroma of all cerebral vessels, convolutions generally atrophic, most marked atrophy in frontal lobes; right heart dilated, hypertrophy of myocardium in wall of left ventricle, chronic endocarditis, mitral insufficiency; advanced atheroma of aorta and peripheral vessels; cholelithiasis; chronic interstitial nephritis; chronic cystitis; chronic perisplenitis; uterus and ovaries atrophic.

CASE XXII.—J. D., No. 944, a painter, 74 years of age. There is no family or personal history until his commitment to Manhattan State Hospital in 1902 at the age of 64. His commitment paper states that the onset of his psychosis was gradual and that it began 15 years before, but this is questionable. Etiological factors given as adverse conditions, syphilis and intemperance. To the committing physicians he said that two

hoboes called him a filthy name 15 years ago and started a story about him. Ever since that time he had been hunted like a hound; everywhere he went he met people who knew this story; they followed him; they worked in covert ways. He evidently had hallucinations of hearing and was depressed and worried. He had "a stroke" with a right hemiplegia six weeks earlier and speech was still affected.

On admission to Manhattan State Hospital in 1902 he was old and decrepit and showed residuals of his paralysis. He was lame and saliva ran from his mouth; he spoke with difficulty. There was a history of syphilis but no physical signs. Intense conjunctivitis. He was wet and soiled.

Mentally, delusions of persecution were very prominent and he was depressed and very apprehensive. He reacted to hallucinations of hearing and sight. After a residence of five months in Manhattan State Hospital he was transferred to Central Islip State Hospital. On arrival there and during his residence he retained his systematized persecutory ideas; was depressed and apprehensive. His memory was poor but he had some appreciation of time and place. He reacted to hallucinations. Frequently he became profane and abusive. Admitted to the Binghamton State Hospital by transfer in 1907. His delusions were of a persecutory trend and he believed himself to be the greatest living poet. He had no insight but was fairly oriented. He deteriorated slowly; was untidy and uncleanly in his habits; frequently he was surly, profane and abusive. Chronic interstitial nephritis and chronic interstitial myocarditis caused his death.

Autopsy Abstract.—Brain 1160 grams; chronic pachymeningitis, edema of pia, general atheroma of cerebral vessels, convolutions generally atrophic, most marked atrophy in frontal, lateral ventricles somewhat dilated, large old softening in posterior limb of left internal capsule, small softening in middle of right optic thalamus; heart hypertrophied, chronic interstitial myocarditis, atheromatous coronaries, left ventricle dilated, chronic endocarditis, mitral insufficiency; advanced general atheroma of the whole arterial system; edema of lungs and scars in each apex; chronic interstitial nephritis.

CASE XXIII.—C. S., No. 946, farmer, 69 years of age. No family history obtained. He was admitted to the Binghamton State Hospital at the age of 47 with a psychosis of 13 years duration and was then classified as terminal dementia. This was the first attack. At the time of admission and during his residence in the hospital he was always reported as demented and delusional. His manner was agreeable and he was always contented with his surroundings. His delusions were of a grandiose nature and were firmly fixed. He believed himself to be God and Christ and to be in possession of millions of dollars. His memory, orientation and judgment were very defective but he worked regularly on one of the hospital farms and was considered trustworthy. At times he reacted to hallucinations claiming to see angels in the air. Aside from two attacks of

erysipelas his residence at the hospital was uneventful. Death finally resulted from chronic interstitial nephritis with profuse diarrhœa.

Autopsy Abstract.—Brain 1320 grams. Chronic leptomenigitis with injection of pial veins and edema, vessels contain non-girdling atheromatous patches, convolutions atrophic with widened sulci most marked in frontal lobes, fine granulations in third, fourth and lateral ventricles; heart hypertrophied, chronic endocarditis; advanced general arterio-sclerosis; intense congestion and edema of lungs with some small patches of broncho-pneumonia; chronic interstitial nephritis.

CASE XXIV.—E. S., No. 949, widow, aged 65 years. A paternal grandfather and a maternal aunt were insane (types of psychoses unknown). She enjoyed good health up to the time of the onset of her psychosis at the age of 57. She gradually lost her memory, became careless of her personal appearance, was unable to care for her ordinary needs and would become irritable when any attempt was made to correct her mistakes. Her mental deterioration was steadily progressive. She became untidy and at times uncleanly in her habits, was easily confused and amnesia became extreme. Some hallucinations of sight and hearing are mentioned but these were never prominent.

On admission to the hospital at the age of 62, a stout, elderly woman showing a slight amount of arterio-sclerosis presented. There was some edema of feet and ankles. Heart, lungs, abdomen, urine negative. Reflexes, cutaneous sensibilities and motor functions normal.

Mentally she was amnesic, completely disoriented and demented. She showed only transitory comprehension of questions asked her. Her manner was simple, childish and irresponsible but no delusions or hallucinations were elicited. Memory for both remote and immediate past were very imperfect and insight into her condition was wholly lacking.

During her residence in the hospital, about five years, her mental failure was extreme. Physical failure was slower. She developed pulmonary tuberculosis during the last year of her life and this finally caused her death.

Autopsy Abstract.—Brain 1110 grams. Chronic pachymeningitis, edema of pia and chronic leptomenigitis, moderate atheroma of vessels, lateral ventricles somewhat dilated, convolutions very atrophic especially in frontal, brain substance very soft, no focal softenings; general arterio-sclerosis; pulmonary tuberculosis with cavity formation and consolidation; chronic interstitial nephritis; chronic cystitis; mesenteric lymph nodes tubercular.

CASE XXV.—J. C., No. 950, a retired farmer, 70 years of age, whose father was intemperate and whose mother was insane a short time before her death at 72. His health was good until he was 66 years old when he suffered from "a stroke" of paralysis which affected the left side. About this time he lost considerable money in a bank failure. He partially recovered from his paralysis but showed considerable memory defect.

Two years later another "stroke" paralyzed the left side and mental deterioration was marked. He wandered away from his home, his memory defect became more marked, he became untidy and careless in his personal habits, was confused and at times restless and irritable, threatening members of his family. His conversation was rambling and incoherent.

On admission to the hospital a very weak and emaciated senile patient presented. His gait was unsteady and he showed residuals of a left hemiplegia. Marked arcus senilis and marked general arterio-sclerosis. Systolic murmur over apex of heart and moist rales over bases of lungs posteriorly.

Mentally he was confused, restless, very amnesic and completely disoriented. On account of the patient's great weakness a complete examination was impossible. During his short residence at the hospital he was in bed continuously. He was restless, confused, at times tried to leave his bed, muttered to himself in an unintelligible manner, was unable to enter into conversation on account of a mild delirium. He did not appreciate his surroundings and had no insight into his condition. He steadily grew weaker, developed broncho-pneumonia and died four days after admission.

Autopsy Abstract.—Brain 1260 grams. Chronic external pachymeningitis with slight internal hemorrhagic pachymeningitis over left convexity, pia edematous throughout and chronic leptomeningitis over frontals, centrals, Sylvian fissure and cisterna, some atheromatous yellow nodules in basilar and beginnings of cerebral arteries, convolutions atrophic in frontal, central and parietal regions, no softenings in cortex, marrow, capsules or basal nuclei; hypertrophy of heart, chronic endocarditis with some mitral stenosis; considerable atheroma of aorta and peripheral vessels; broncho-pneumonia, congestion and edema of lungs; chronic interstitial nephritis; chronic perisplenitis.

CASE XXVI.—E. H., No. 958, farm hand, 61 years of age. Unfortunately there is no family or early personal history of this patient. He was an inmate of an almshouse for three months before the onset of his psychosis at 60. Apprehension gradually developed in reaction to hallucinations of hearing. He heard voices threatening his life and begged to be protected and hidden. He would run away and hide to escape his imaginary impending murder. At times he was very emotional.

On admission to the hospital a decrepit, bent old man showing considerable emaciation and senile atrophy presented. Gait slow and trepidant due to age and club feet, senile tremors of extremities, exaggerated deep reflexes, incoordination of finer movements; pupils irregular and unequal and react sluggishly to light; marked arterio-sclerosis.

Mentally a childish, mildly confused and amnesic old man with considerable anxiety and apprehension. His apprehension was a reaction to auditory hallucinations.

During his residence in the hospital he continued apprehensive and frequently asked for protection. He had some idea of his surroundings

and was fairly oriented as a rule, occasionally becoming confused. His memory was quite defective. Mental and physical deterioration were steadily progressive. A fractured hip and broncho-pneumonia caused his death.

Autopsy Abstract.—Brain 1280 grams. Moderate chronic external pachymeningitis, atheroma of basilar and cerebral arteries, convolutions atrophic most marked in frontal region, no softenings; healed tubercles in apices of lungs, broncho-pneumonia, intense congestion and edema of lower lobes; fatty liver; chronic interstitial nephritis.

CASE XXVII.—H. G., No. 967, an inmate of a Woman's Relief Corps Home, aged 76 years. A mother and a sister were insane (types of psychoses unknown) and another sister was inferior. There was no accurate family or personal history before her admission to the Home when she was 73 years old. It was then noticed that she talked and acted irrationally. The onset was gradual and the cause was given as age and heredity. She wandered aimlessly about at night, sometimes entering the rooms of other inmates of the Home and attempting to get into bed with them. She became agitated and sought protection from people who were conspiring against her.

On admission to the hospital, six weeks after the alleged onset, an elderly woman showing the usual signs of senility presented. General arterio-sclerosis, arcus senilis; feet and ankles edematous; systolic mitral murmur; albumin but no casts in the urine; knee jerks absent, superficial reflexes diminished; complete prolapse of uterus.

Mentally she was quiet and orderly, exhibited some persecutory delusions, was poorly oriented for time; showed a marked memory defect and reacted to aural hallucinations.

During her residence in the hospital (3½ years) she retained her persecutory ideas; they were vague and were not directed against particular persons but at times caused her to become emotional and much agitated. She deteriorated steadily in her mental and physical condition. She was in bed more than a year before her death on account of general weakness. Ten days before death a series of convulsions involved the left side and finally left it paralyzed.

Autopsy Abstract.—Brain 1240 grams. Skull greatly thickened by a chronic pachymeningitis, chronic leptomeningitis, some edema of pia, considerable atheroma of arteries, convolutions atrophic especially frontal, left central and parietal areas, lacunar softenings in right and left lenticular nuclei and in both internal capsules, a large acute softening in white marrow cutting off optic radiation just outside and behind right lateral ventricle; heart hypertrophied, chronic endocarditis; advanced general atheroma of arteries; chronic interstitial nephritis; purulent cystitis; red infarcts in lungs; gall stones and chronic cholecystitis; infarct in spleen; ovaries cystic; uterus prolapsed and contained many small fibroids.

CASE XXVIII.—G. B., No. 968, farmer, 62 years of age. There is no family or personal history previous to admission to the Binghamton State

Hospital at the age of 41. At this time he was in rather poor physical condition with some physical signs of pulmonary tuberculosis. His mental condition was then given as one of terminal dementia. He was untidy in his habits. During his residence in the hospital his mental deterioration was steadily progressive and finally became extreme; he vegetated. At irregular intervals he would become excited and noisy, talked incoherently and was very profane. Occasionally he assaulted impulsively. Several notes state that he believed himself to be the Lord, he had various religious delusions and there seemed to be a distinct sexual trend in his ideas. During most of the latter years of his life he was dull, stupid and indifferent, and was untidy in his habits. There were several exacerbations of his pulmonary tuberculosis, each leaving him in poorer physical condition. He finally died of pulmonary tuberculosis after a hospital residence of 21 years.

Autopsy Abstract.—Brain 1240 grams. Dura thickened, chronic leptomeningitis along longitudinal fissure, brain arteries normal, convolutions generally atrophic, most marked atrophy in frontal and motor areas, no softenings; cardiac dilatation, chronic endocarditis, mitral insufficiency; general arterio-sclerosis except brain; pulmonary tuberculosis; chronic interstitial nephritis; tubercular entero-colitis; tubercular mesenteric glands.

CASE XXIX.—J. D., No. 973, farm laborer, 62 years of age. One sister is insane (type of psychosis unknown). He used alcohol and tobacco to excess, often becoming intoxicated. When 25 years of age he received a stab wound in the back just to the right of the mid-dorsal column. There was no paralysis immediately following. There is a history of rheumatism which necessitated the use of crutches for locomotion for six years after 52. At 58 unable to walk at all. Early in his 60th year he became sullen, refused to converse and at times refused to eat. He had a delusion that a brother attempted to poison him. Then he began to react actively to hallucinations of sight and hearing; he shook his fists, tore the bedclothing, screamed at the top of his voice and threatened suicide. There was no history of syphilis or of paralysis.

On admission to the hospital he presented a spastic paraplegia with muscular atrophy of both legs and contractures. The knee joints were enlarged and contained fluid. Superficial reflexes were diminished, deep slightly exaggerated, and organic controlled. Ankle clonus was present, no Babinski. Pupils normal. Speech normal. Numbness and diminution of pain sense in legs. Heat and cold sense also disturbed. The duration of this condition could not be ascertained. Some arcus senilis and moderate arterio-sclerosis. Heart, lungs and abdomen negative.

Mentally he was quiet and orderly; remained in bed with the clothes over his head and became very irritable and sarcastic when disturbed. He frequently pointed to the ceiling and muttered to himself. When he would reply to questions, which was seldom, his answers were coherent, desultory and slightly retarded. He was easily confused and showed some

deterioration. Disorientation for time and grasp on recent past was poor. He exhibited considerable restlessness and reacted to visual and aural hallucinations. He was untidy and uncleanly.

He gradually became extremely deteriorated mentally. Throughout his residence in the hospital he reacted actively to hallucinations of sight and hearing. He became much reduced physically during the last years of his life and an intercurrent broncho-pneumonia caused his death.

Autopsy Abstract.—Brain 1420 grams. Chronic pachymeningitis, chronic leptomeningitis, atheromatous patches in cerebral vessels, convolutions somewhat atrophic with widened sulci; heart dilated, chronic endocarditis, patent foremen ovale; general atheroma of arterial system; broncho-pneumonia; chronic interstitial nephritis; infarct of spleen. No autopsy of the spinal cord.

CASE XXX.—F. R. H., No. 976, a domestic, 64 years of age. This patient was admitted to the Binghamton State Hospital in 1882, at which time she was 34 years of age. This was her first attack but was said to have had a duration of 15 years. The cause of her insanity is given as cessation of menstruation and heredity; it being stated that her paternal grandfather was insane. Her commitment paper stated that she was excitable, suicidal and homicidal, and was given to sudden passions.

Physically, on admission, she was in good condition. Mentally, she was quiet and orderly, neat and tidy. During her residence of 30 years in the hospital at times she would become excited and pounded and hit herself but never caused any serious injury. She would stand in one place for hours without moving; at other times she was restless and very resistive and profane and obscene. She apparently reacted to hallucinations of hearing. Her memory was poor. Her mental deterioration progressed slowly but steadily.

Thirteen days before her death she developed a diarrhœa which responded to treatment. Two days before death she had a general convulsion. She became unconscious and there was a paralysis of both arms and legs, reflexes were absent. Urine contained hyalin and granular casts and albumin. The right cheek puffed at each expiration. Blood pressure 130. Shortly before death the left pupil was slightly larger than the right.

Autopsy Abstract.—Brain 1320 grams. Chronic pachymeningitis, free blood in subdural space on left side over motor cortex, the left anterior and posterior centrals, paracentral and superior parietal convolutions and the underlying marrow are almost completely destroyed by a large hemorrhage with both lateral ventricles full of clotted blood which had broken through the left internal capsule and basal nuclei, all convolutions were flattened, vessels contained many girdling and non-girdling yellow plaques; chronic endocarditis, left ventricle dilated; advanced general atheroma of the arteries; small patch of broncho-pneumonia in right lung; chronic interstitial nephritis.

CASE XXXI.—E. M. M., No. 982, widow, 83 years of age. Family history negative for nervous or mental diseases. She had always been

well until the onset of her psychosis at the age of 74. The death of a son at that time was apparently an important etiological factor. She gradually became despondent and took less interest in her own life. At the age of 81 there is a history of cerebral insult which caused a transient paresis of her left leg. Her mental condition then began to deteriorate very rapidly. She became unable to perform her household duties; was irritable and obstinate; endangered the lives of those in her home by turning on the gas without lighting it; and her memory and judgment were very defective.

On admission to the hospital a well-developed rather feeble old lady presented. Heart, lungs and abdomen negative. Reflexes normal. General arterio-sclerosis.

Mentally she was completely disoriented, easily became confused and fatigued. Her memory was very poor for both recent and remote events. Her judgment was defective.

During her residence in the hospital (1 year 9 months) mental and physical deterioration were steadily progressive. She became very childish and her memory and judgment became nil. An epithelioma developed on her vulva. Acute cystitis caused her death.

Autopsy Abstract.—Brain 1200 grams. Chronic leptomeningitis, considerable atheroma of cerebral arteries, moderate atrophy of convolutions, an acute softening of white marrow of the right occipital lobe behind the lateral ventricle cutting off the optic radiation; heart hypertrophied, chronic endocarditis, mitral insufficiency; general advanced atheroma of arterial system; red infarct of left lung; acute hemorrhagic cystitis.

CASE XXXII.—J. H., No. 986, laborer, 61 years of age. Family history negative for nervous and mental disease. He is said to have had fits at the age of three or four years. During his life he was a wanderer and never retained a position for any length of time. Was reticent, dreamy, peculiar, odd and preferred to be alone. He became a tramp. At the age of 61 he became morose and refused to work. At times he refused food and was suspicious of those about him. This condition developed in few weeks.

On admission to the hospital he was ill nourished and poorly developed and his motor activities were at a low ebb. Heart hypertrophied, systolic murmur in aortic area; general arterio-sclerosis; lungs and abdomen negative; reflexes normal; fine tremor of fingers; cutaneous sensibilities somewhat blunted but no complete anesthesia.

Mentally he was depressed and apprehensive and would not talk. He was resistive and seemed to expect some personal attack.

During his residence in the hospital (4 months) he was extremely depressed and was very suspicious of those about him. He showed great agitation, moving about the ward restlessly, at times moaning and resisting violently any attempt to approach him or to administer to his needs. He refused food and had to be tube-fed. He repeated over and over "Oh, my

God" but would answer no questions. He lost flesh and strength rapidly and died suddenly of acute cardiac dilatation.

Autopsy Abstract.—Brain 1360 grams. Pia slightly thickened along longitudinal fissure, vessels normal, fine granulations in roof of fourth ventricle, none in lateral, no softenings or atrophies; heart hypertrophied, both sides of heart dilated, chronic endocarditis; atheroma of aorta and most of peripheral vessels; lungs congested and edematous.

CASE XXXIII.—D. B. C., No. 989, farmer, aged 62 years. There is no family history of nervous or mental disease. Friends stated that he had always been looked upon as an unfortunate, weak-minded boy and man. Since maturity he had used alcohol to excess and was intoxicated by small amounts. At the age of 50 after protracted alcoholism, he became violent, threatened the lives of his friends, claimed to have farms, horses, etc; stated that he had a wife and children when he had never been married. He recognized strangers as old friends.

On admission to the hospital in 1901, one week after the onset, he was in good physical condition. Mentally he was cheerful, talkative, incoherent; had a very poor memory and laughed continually in a foolish manner. His manner was that of an imbecile.

During his residence in the hospital (12 years) his condition was that of an imbecile. He had occasional excited periods when he would make assaults and destroy clothing and furniture. Most of the time he was childish, quiet and untidy. During the last few years of his life he presented a rather typical picture of senile dilapidation. An infection of his urinary tract finally caused his death.

Autopsy Abstract.—Brain 1350 grams. Chronic pachymeningitis, chronic leptomenigitis, edema of pia, atheroma of cerebral vessels, general atrophy of convolutions, most marked in frontal; hypertrophy of heart, chronic endocarditis, mitral insufficiency; general atheroma of arterial system; purulent bronchitis, congestion and edema of lungs; chronic interstitial nephritis; acute pyelitis; acute cystitis.

CASE XXXIV.—J. V. A., No. 990, female, aged 67 years. No family history of nervous or mental diseases except one paternal uncle who was an epileptic. She is said to have enjoyed good health until the onset of her psychosis at the age of 64. She then began to be very forgetful and at times was agitated and irritable. Her mental deterioration was steadily progressive. She took no care of her person, became more irritable and made threats to injure those about her with a knife; her conversation became incoherent and she reacted to hallucinations of sight.

On admission to the hospital at 67 she showed well-advanced senile changes. Considerable arterio-sclerosis, blood pressure 140; reflexes normal; heart, lungs and abdomen negative. Examination unsatisfactory because of agitation and resistiveness of patient.

Mentally she was confused, restless, very amnesic, irritable and talked in a rambling and disconnected manner. She was completely disoriented;

her memory was defective for both recent and remote events and she had no insight into her condition.

During her residence in the hospital (3 months) her mental condition remained much the same as on admission. She wandered about by day and by night, picking at the clothing of other patients and pulling bed-clothing from beds. Her answers to questions were always irrelevant. She was confused, agitated, depressed and completely disoriented. Physical failure was rather rapid. After several attacks of syncope she died from mitral insufficiency.

Autopsy Abstract.—Brain 1160 grams. Chronic pachymeningitis, pia edematous, vessels apparently normal, convolutions generally atrophic, most marked atrophy in frontal, motor and parietal cortex; mitral valves incompetent; moderate general arterio-sclerosis; some edema of the lungs; chronic interstitial nephritis.

CASE XXXV.—E. D. P., No. 995, a retired policeman, 78 years of age. Two maternal cousins committed suicide. There is no other family history of nervous or mental disease. He had always enjoyed good health until the onset of his psychosis at the age of 75. He became dazed and bewildered; had an idea that his house was full of people who were persecuting him and claimed that he had been hypnotized. He threatened suicide. The onset was gradual and the psychosis progressed steadily until he became so much deteriorated that he was completely disoriented and would get lost in familiar surroundings.

On admission to the hospital at the age of 76 he appeared senile. General arterio-sclerosis, arcus senilis; pupillary superficial and deep reflexes normal; heart, lungs and abdomen normal; chronic cystitis.

Mentally he was mildly elated, simple and childish. His memory for recent and distant events was somewhat impaired and he filled in the deficiencies at times by fabrications. There were some vague persecutory delusions; orientation was poor for place and he had no insight.

During his residence at the hospital (2 years) his mental and physical conditions progressively deteriorated. Amnesia and disorientation became complete. He became untidy and uncleanly in his habits.

Autopsy Abstract.—Brain 1220 grams. Chronic pachymeningitis, chronic leptomenigitis, considerable atheroma of cerebral vessels, convolutions much atrophied most marked in frontal, upper parietal and occipital convolutions, brown softening in middle of left lenticular nucleus; hypertrophy of heart, chronic endocarditis, mitral insufficiency; advanced atheroma of whole arterial system; broncho-pneumonia; chronic interstitial nephritis; chronic cystitis; chronic perisplenitis.

CASE XXXVI.—H. L., No. 996, teacher, aged 73 years. The only history of nervous or mental disease in her family is of a paternal uncle who was insane, type of psychosis unknown. She had a collegiate training and taught French and music. At 58 she was compelled to give up teaching on account of increasing deafness. This deafness is believed to be one of the

etiological factors in the development of her psychosis. There is no history of serious illness until a complete hysterectomy for a large fibroid at 62. While in the general hospital she had persecutory ideas directed against some of the nurses and after her return to her home she became difficult to manage and control. About three months later she was admitted to an Old Ladies' Home as an inmate. Here she gradually developed persecutory delusions and ideas of reference and became excited and depressed and threatened suicide.

On admission to the hospital in 1903 at the age of 63, she was emaciated, blind in one eye, very deaf, some arterio-sclerosis, tremor of tongue, reflexes diminished.

Mentally she was quiet and orderly, much depressed and talked freely of the conspiracy against her.

During her residence in the hospital she was always apprehensive, expressing belief that there was a conspiracy to persecute her. She was very restless, walking about and asking those about her numerous questions as to what was to become of her, etc. She frequently stated that the food was poisoned. At times she was violent and assaulted the nurses and patients impulsively. She was childish, faultfinding and unreasonable in her demands. She gradually became resistive, disoriented, amnesic and generally much deteriorated. She was in poor physical condition throughout. She was found dead in bed one morning after having been seen several times during the night in comfortable condition.

Autopsy Abstract.—Brain 1230 grams. Chronic pachymeningitis, edema of pia, small patches of atheroma at origin of cerebral arteries, convolutions generally atrophic, two lacunar softenings in middle of right optic thalamus; heart hypertrophied, dilatation of mitral ring, chronic endocarditis, mitral insufficiency, both sides of heart dilated; general arterio-sclerosis; chronic interstitial nephritis.

Analysis of the 36 plaque cases places at least 28, or over 77 per cent of them, in the senile psychosis group. In five of the senile cases there was a suggestion of the presbyophrenia symptom complex, but in no case could the psychosis be labelled pure presbyophrenia. Four cases, XI, XXIII, XXVIII and XXX were of the dementia præcox type living to the seventh decade and showing many senile characteristics. In cases XXIX and XXXIII alcohol was undoubtedly a prominent etiological factor. They showed many senile characteristics, especially case XXXIII, whose last few years were passed as a typical senile dilapidation. He was also inferior. Case XIX was an agitated depression which may have been involution melancholia or an agitated depression type of senile psychosis, diagnosis being uncertain on account of

the very poor history and the difficulty of making any mental examination.

Cases XII, XIII, XXIV and XXXIV were diagnosed clinically senile psychoses, but were atypical. In addition to miliary plaques the sections of these four cases showed the intracellular neurofibril alterations of Alzheimer. Case XII, a female, developed a psychosis at 49. She became depressed and suicidal, was confused and disoriented, had very poor memory and retention, and insight and judgment were defective. Physically she showed over-active reflexes, coarse jerky tremors of tongue, unequal pupils which reacted well and peripheral arterio-sclerosis. Age at death, 53 years. Case XIII, female, developed a psychosis at 57. She gradually became confused, disoriented and her memory and retention became very defective. She had hallucinations of sight and hearing. Physically she complained of headaches and vertigo; there was a coarse tremor of the hands, unsteady gait and incoordinated movements; exaggerated reflexes; mitral heart lesion; moderate arterio-sclerosis. Age at death, 62 years. Case XXIV, a female, whose psychosis developed at 57. She gradually became confused and disoriented and her memory became very defective. She had hallucinations of sight and hearing. Judgment and insight were nil. Physically she showed some arterio-sclerosis; reflexes, cutaneous sensibilities and motor functions were normal. Age at death, 65 years. Case XXXIV, female, developed her psychosis at 64. She became very forgetful; was confused, irritable, disoriented and was absolutely lacking in judgment and insight. She reacted to hallucinations of sight. Physically she had considerable arterio-sclerosis. Her reflexes and motor functions were normal. Age at death, 67. These four cases stand out in rather marked contrast from the other plaque cases. They were the only ones demonstrating the intracellular neurofibril alterations. The onset of the psychosis in each case, with the possible exception of Case XXXIV, was in the presenile period and the deterioration was extreme. Confusion and disorientation characterized each case and three had hallucinations. Two had well developed physical signs of organic brain lesions. Aphasic symptoms and ideational apraxia were lacking in all cases. All of the cases were females.

Of the 58 elderly cases whose brains failed to demonstrate plaques, 12 were diagnosed clinically senile psychosis. The clinical abstracts and the autopsy abstracts of these 12 cases are here added.

ABSTRACTS OF CLINICAL HISTORIES AND AUTOPSY FINDINGS IN SENILE PSYCHOSES WITHOUT PLAQUES.

CASE XXXVII.—P. F., No. 555, farmer, 60 years of age, heavy drinker. One aunt was insane and one brother committed suicide during an attack of gripe. He enjoyed good health until his 59th year when his psychosis developed. The onset was gradual. His conversation became rambling; he could not sleep at night and became very delusional, most of his delusions having reference to travel; was depressed at times and at other times was active and violent. Confusion and disorientation became prominent.

On admission to the hospital a poorly nourished elderly man presented. Signs of infiltration of the right upper lobe of lung; mitral regurgitation; edema of ankles; marked arterio-sclerosis; extreme internal strabismus; reflexes normal; no tremors; no speech defects; gait somewhat trepidant.

Mentally he was restless, agitated and noisy; untidy and destructive of his clothing; made many useless and senseless gestures offering many and different explanations for the same; replied freely to questions and his replies were coherent but inaccurate; at times he fabricated. There was some flight of ideas; delusions expansive and persecutory in nature; reaction to visual and aural hallucinations; part of the time he was completely disoriented and then again he was partly oriented; grasp on remote and recent past was impaired; retention defective; insight only partial.

During his one year and four months residence in the hospital he presented essentially the same picture as on admission except that he became more confused and demented. He was noisy and restless especially at night. His physical health failed steadily. He became feeble, was unsteady on his feet and his temperature became subnormal.

Autopsy Abstract.—Brain 1540 grams. Dura not thickened not adherent, pia edematous, somewhat thickened and opaque over upper central convolutions with many Pacchionian granulations, vessels show advanced arterio-sclerosis throughout, convolutions somewhat atrophic with widened sulci in frontal and occipital lobes, no focal softenings in cortex, marrow or basal nuclei, brain substance soft; chronic endocarditis; general arterio-sclerosis; liver, kidneys and spleen much congested.

CASE XXXVIII.—A. K., No. 851, a retired school teacher, 85 years of age. One grandfather was alcoholic and one brother committed suicide at 45 years of age during a depression over family troubles. There is said to have been some insanity on the maternal side but this information is not confirmed. At the age of 31 he had an attack of "nervous prostration," aside from which his entire life has been normal up to the onset of his

psychosis at the age of 68, at which time he became depressed and threatened suicide. This depression improved somewhat but he never regained his mental equilibrium. He gradually became untidy and filthy in his habits; built fires at night; wandered about at night shouting and disturbing neighbors; threatened to kill neighbors. He was first committed to the Binghamton State Hospital at the age of 80. At this time he was restless, talkative, at times confused, memory was defective for recent events, delusional, some delusions of a persecutory nature, others somatic and expansive, orientation fair. He gradually became quieter and was taken home after a hospital residence of 10 months. He retained his persecutory ideas. He did not get along well; was frequently involved in altercations about imagined business; was easily excited and made numerous threats; made himself so disagreeable that he was readmitted to the hospital at the age of 83.

At this admission a fairly preserved man showing the usual senile changes presented. Some impairment of hearing; pupils equal, irregular, especially right, react well; deep reflexes exaggerated, considerable tremor of fingers; had frequent attacks of vertigo for many years; pulse high tension, vessels stiff and tortuous, arcus senilis; varicose veins.

Mentally he was excited, voluble, elated and very delusional, his delusions being expansive, religious and persecutory directed against his children and neighbors. Conversation was somewhat rambling and disconnected; memory was good for recent and remote events; orientation good; no insight; retention good.

During his two years residence in the hospital he showed a slowly progressive deterioration. At times he was emotionally elated; later he became faultfinding, profane and obscene. He became filthy in his habits; restless and noisy at night. His memory became impaired. Three months before his death he developed a cellulitis of the left leg which was the cause of his death.

Autopsy Abstract.—Brain 1500 grams. Dura thickened, injected and adherent to calvarium, pia edematous, thickened, opaque over vessels and sulci, congestion over right anterior central, frontal, temporal and left occipital areas, Pacchionian granulations along longitudinal fissure, vessels very much thickened, stiff and tortuous throughout, convolutions much atrophied and sulci widened throughout, marked in motor and frontal areas, brain large and firm and well marked; chronic endocarditis, mitral insufficiency; advanced atheroma of aorta and peripheral vessels; internal and external iliacs on left side greatly dilated and contain thrombus; congestion, edema, a slight broncho-pneumonia in lower lobes of lungs; passive congestion of liver and spleen; chronic parenchymatous nephritis.

CASE XXXIX.—J. H., No. 860, a farmer, 77 years of age, negative family history for nervous and mental disease. He enjoyed good health until his 77th year. The onset of his psychosis dates from this time. It was fairly rapid in development. He became restless; wandered away from home and was unable to find his way back; assaulted his wife and

threatened suicide. Three months after the onset it was necessary to commit him to the hospital.

On admission to the hospital a poorly nourished man; deformity and shortening of left leg due to an old fracture; arcus senilis; exaggerated knee jerks; tremor; marked arterio-sclerosis; irregular pulse; gait feeble.

Mentally he was confused, appeared somewhat depressed and anxious; delusions of persecution, that his children wanted to get rid of him so that they might get his property and to accomplish this they arranged to poison him; oriented except for time; memory fair for remote past but poor for immediate past; some insight.

He failed steadily physically and mentally during his 10 months residence in the hospital. His confusion became more marked, memory failed, disorientation became complete. For a time he was resistive and it was necessary to feed him. One month before his death general weakness confined him to his bed. Bed sores developed and later a dry gangrene appeared and spread on the left great toe and over the dorsum of the left foot.

Autopsy Abstract.—Brain 1300 grams. Dura thickened and adherent to skull, pia thickened, vessels generally thickened, nodular and have many yellow plaques, convolutions atrophied and sulci widened especially in frontal and occipital lobes, no softenings, brain substance all soft; chronic endocarditis, calcareous deposits in mitral valves; advanced atheroma of aorta and peripheral vessels; chronic interstitial nephritis; liver and spleen congested.

CASE XL.—J. P., No. 872, a farmer, 71 years of age, whose mother died insane (senile psychosis) at the Binghamton State Hospital. There is nothing else of interest in the family or personal history. He was an inmate of a county house when his psychosis developed at the age of 66. He became despondent; slept little at night; talked at night; attempted to run away; had hallucinations of hearing and reacted to them; delusions of persecution in regard to property.

On admission to the hospital at the age of 67 a poorly nourished man; hearing and vision defective; gait unsteady, station poor, tremor of hands and tongue; patellar reflexes exaggerated; pupils normal; arcus senilis, general arterio-sclerosis.

Mentally, he answered questions after urging; appeared suspicious; showed no insight into his mental condition; had hallucinations of hearing; was easily confused and showed marked memory impairment for recent events, although memory was quite good for remote past.

His dementia increased steadily, memory impairment advancing, disorientation; he became irritable, faultfinding, suspicious, uncommunicative, seclusive and reacted to hallucinations of hearing. Six months before death he had a slight seizure causing temporary paresis for 48 hours. During the last two days of his life he was exceedingly drowsy.

Autopsy Abstracts.—Brain 1190 grams. Dura adherent to calvarium, pia opaque and thickened over sulci, some edema over frontal tips, all vessels

have many yellow plaques, frontal convolutions and left calcarine area atrophic, brain substance soft, lacunar softenings in left lenticular nucleus, left optic thalamus and anterior limb of internal capsule, and in right optic thalamus; chronic endocarditis, mitral stenosis; advanced atheroma of aorta and peripheral vessels; chronic purulent bronchitis.

CASE XLI.—J. M., No. 901, cigarmaker, 83 years of age. There is no family history or early personal history. At the age of 72 he developed delusions of a persecutory nature in reaction to hallucinations of hearing. He became restless and noisy at night shouting and screaming, saying that young men came to seek his daughter. He was admitted to Manhattan State Hospital where he was noted as depressed and demented. He could not tell the day of the month or the year. After about a year he was transferred to the Central Islip State Hospital where his notes state that he had persecutory ideas and reacted actively to hallucinations of sight and hearing. He was disoriented, had deficient memory and was lacking in judgment and insight. Occasionally he was restless and excited. Transferred to the Binghamton State Hospital at the age of 79. During his residence in the latter hospital his mental condition was essentially as described at the other hospitals. He deteriorated slowly. He was always noted as being in fair physical condition. He died after a short illness resulting from carbuncle of the neck.

Autopsy Abstract.—Brain 1440 grams. Chronic pachymeningitis, chronic leptomeningitis, cerebral arterio-sclerosis, marked atrophy of frontal and central convolutions; chronic endocarditis; atheroma of arterial system; chronic interstitial nephritis; large carbuncle of neck involving skin and deep fascia.

CASE XLII.—C. B., No. 926, old soldier, 71 years of age. He went to the Soldiers and Sailors' Home at Bath, N. Y., when he was 66 years of age. For some months prior to his admission to the Home he had shown memory defects and mental confusion. In the Home he had no idea of his surroundings, was dull and stupid most of the time but occasionally had periods of violent and dangerous excitement. After two years in the Home it was necessary to commit him to the Long Island State Hospital. Notes made there state that he showed marked memory defect for both recent and remote occurrences, had no insight, and made numerous discrepancies in his statements. He remained in bed during most of his residence there. If disturbed he became noisy and abusive. Transferred to the Binghamton State Hospital at the age of 70. Physically he was poorly nourished; tremor of facial muscles and hands; general arterio-sclerosis; heart, lungs and abdomen negative. Mentally he showed complete disorientation, memory very deficient, judgment and insight lacking. He was very resistive and easily irritated. He remained in practically the same condition until his death, which resulted from abscess of the lung and bronchopneumonia.

Autopsy Abstract.—Brain 1250 grams. Chronic leptomeningitis, edema of pia, cerebral arterio-sclerosis, atrophy of convolutions, lateral ventricles

dilated; general arterio-sclerosis and atheroma; abscess of left lung and broncho-pneumonia; fatty liver, cholelithiasis; chronic interstitial nephritis.

CASE XLIII.—R. G. C., No. 933, farmer, 72 years of age. One brother was insane for a short time following a heat stroke. There is no history of illness previous to the onset of his psychosis except some retention of urine due to enlarged prostate. In his 72d year he wrote to his son that he was about to be married and told of inheriting great wealth. He became greatly excited over trivial matters and finally became violent.

On admission to the hospital a poorly nourished old man presented. He had marked arcus senilis, general arterio-sclerosis, blood pressure 144, physical signs of pulmonary tuberculosis. His heart and abdomen were negative. Motor functions negative.

Mentally his retention was very defective, memory for remote and immediate past was very poor. He was disoriented, irritable and confused; expressed a vague paranoid trend and some ideas of affluence. His appearance was slovenly and he wet and soiled his clothing. During his five months residence in the hospital his mental condition did not change materially. He became less wet and soiled. Occasionally he was irritable but usually he was childishly happy. Lobar pneumonia caused his death.

Autopsy Abstract.—Brain 1360 grams. Chronic internal pachymeningitis hemorrhagica, chronic leptomeningitis, edema of pia, cerebral arterio-sclerosis, convolutions slightly atrophic; hypertrophy of heart, chronic endocarditis, mitral insufficiency; general arterio-sclerosis; lobar pneumonia, some caseous patches in right upper lobe; chronic interstitial nephritis.

CASE XLIV.—L. B., No. 934, retired teacher, aged 72 years. Since girlhood she was whimsical and eccentric regarding certain articles of diet. Good health until her 60th year when it was necessary for her to discontinue her teaching on account of physical and mental breakdown. After a partial recovery she lived with a friend; kept the house and prepared their meals for which she was given her meals. She domineered and influenced her benefactress who was blind. Gradually she developed persecutory ideas directed against neighbors in reaction to what were probably auditory hallucinations. She put cotton in her ears to prevent hearing the remarks made about her. Often she became abusive in the house and on her porch. She would allow no one in the house and neglected to care for her invalid friend. Her ideas in regard to food became more absurd and often she starved herself rather than eat meat or butter or any article containing them.

On admission to the hospital a poorly nourished old lady, aged 70 years presented. She had a cataract in the left eye; pupillary and superficial reflexes normal, deep reflexes exaggerated; some arterio-sclerosis; heart, lungs and abdomen negative.

Mentally she expressed many persecutory delusions; was well oriented; memory was impaired for dates in remote past but was good for events, poor for time in recent past; judgment poor and insight lacking.

During her two years residence in the hospital she retained her persecutory delusions. At first she refused to eat meat, butter or milk believing they were contaminated. She gradually became untidy and uncleanly in her habits; was faultfinding and irritable and gradually deteriorated. Physical failure was steadily progressive. A failing myocardium caused her death.

Autopsy Abstract.—Brain 1250 grams. Chronic leptomeningitis, edema of pia, slight atheroma of cerebral arteries, convolutions slightly atrophic; fatty infiltration of myocardium, right heart dilated; considerable atheroma of general arterial system; congestion and edema of lungs; chronic interstitial nephritis.

CASE XLV.—A. V. T., No. 978, farmer, aged 64 years. His father was alcoholic and was insane for a short time before his death at 63. The patient had always enjoyed good health until the onset of his psychosis in his 64th year. He began to use very bad judgment in business transactions. His temper became very quick and he was frequently threatening and ugly. At night he was restless and noisy. He finally threatened to shoot members of his family and neighbors and had to be committed four weeks after the onset.

On admission to the hospital an old man showing arcus senilis, advanced general arterio-sclerosis, cardiac hypertrophy and a loud mitral systolic murmur, blood pressure 164.

Mentally he showed a paranoid trend directed against relatives; his judgment was very poor; insight lacking; memory for recent events very much impaired and memory poor for dates of remote events; well oriented; retention poor.

During his residence in the hospital his mental condition did not change materially. He died suddenly, about a year after admission, from acute cardiac dilatation.

Autopsy Abstract.—Brain 1480 grams. Chronic pachymeningitis, edema of pia, vessels normal in brain, convolutions atrophic with widened sulci in frontal and central areas; hypertrophy of heart, both sides of heart much dilated, chronic endocarditis, mitral insufficiency; advanced atheroma of aorta and peripheral vessels; chronic interstitial nephritis.

CASE XLVI.—L. C., No. 979, wife of farmer, aged 71 years. The psychosis developed in her 67th year. The onset was gradual. She became forgetful; often wandered away from home, not being able to find her way back; suffered from insomnia, and finally failed to recognize her relatives. She was cared for at home for four years but she required constant attention. She deteriorated gradually. She became careless of her personal appearance often wetting and soiling her clothing. She had visual hallucinations.

On admission to the hospital physical examination showed abdomen, lungs and heart negative; some arterio-sclerosis; some subjective complaints of headache and dizziness; pupils and reflexes normal.

Mentally she was confused, amnesic, poorly oriented and much deteriorated. Her memory was defective for both remote and immediate past;

at times she fabricated. She had neither insight nor judgment. She was childish.

During her twenty months residence at the hospital there was no change in her mental condition except for a progressive deterioration. Physically she declined steadily. She was bedridden for 15 months before her death on account of general weakness. Broncho-pneumonia caused her death.

Autopsy Abstract.—Brain 870 grams. Chronic pachymeningitis, pia edematous, vessels of brain atheromatous, lateral ventricles dilated, the frontal, right supramarginal, right angular and right superior parietal and left anterior central convolutions were very much atrophied making a worm-like appearance; advanced atheroma of the arterial system; broncho-pneumonia; cholelithiasis; chronic interstitial nephritis; cysts in pancreas as result of obstruction of pancreatic duct by gall stones.

CASE XLVII.—E. G. C., No. 980, farmer, 71 years of age. Three maternal uncles were insane (types of psychoses unknown), two of them committed suicide; a niece also has been insane; two sisters have died of "paralysis." His psychosis developed at 70. He developed a depression; had an idea that his family was going to starve, that they were going to freeze and that they were going to burn up. He refused food and was much agitated. This condition developed rapidly.

On admission to the hospital at the age of 71 a poorly nourished old man presented. Heart and lungs negative. Arteries much thickened, blood pressure 190; pupillary, superficial and deep reflexes normal.

Presently he was excited, intensely fearful, anxious, agitated and had delusions of self-accusatory nature. The picture looked much like an involution melancholia but there was a memory defect for both remote and recent events.

During his two months residence at the hospital his mental condition did not change. Lobar pneumonia caused his death.

Autopsy Abstract.—Brain 1410 grams. Chronic pachymeningitis, chronic leptomeningitis, edema of pia, atheroma of all cerebral vessels, convolutions of frontal and central areas especially atrophic, acute softenings involving cortex and marrow in right posterior second frontal convolution extending just into the right anterior central convolution, and in left internal and middle orbital convolutions; hypertrophy of the heart, right heart dilated, mitral valve incompetent; atheroma of arterial system; lobar pneumonia, gray hepatization; chronic interstitial nephritis.

CASE XLVIII.—M. L., No. 993, widow of farmer, 63 years of age. No family history of nervous or mental disease. Patient had always enjoyed good health until 58, when she began to have heart trouble with dyspnoea and edema of ankles. Her psychosis is said to have been gradual in its onset. Early in her 64th year she began to be restless, at times believed she saw her dead relatives, frequently became fearful that her home was to be burned or that some harm was coming to her; at times she was quite depressed and agitated.

On admission to the hospital a poorly nourished woman showing well-marked senile changes presented. Special senses, cutaneous sensibilities and reflexes normal; heart enlarged, mitral insufficiency poorly compensated; considerable arterio-sclerosis, blood pressure 150; chronic interstitial nephritis.

Mentally she was talkative, irritable, partly oriented, memory defective, judgment and insight poor. Later she frequently made mistakes in identity of people; at times believed she was to be shot and thought her daughter had been drowned in the cellar. At these times she was emotional and agitated and very apprehensive. She was resistive. It was necessary to feed her several times because she refused food.

Physical failure was steadily progressive and she died of chronic endocarditis, mitral insufficiency and chronic interstitial nephritis after a hospital residence of 38 days.

Autopsy Abstract.—Brain 1080 grams. Chronic pachymeningitis, edema of pia, atheroma of cerebral vessels, convolutions generally atrophic; hypertrophy of heart, both sides of heart dilated, chronic endocarditis; atheroma of arterial system; some small red infarcts in lungs; cholelithiasis; chronic interstitial nephritis; chronic perisplenitis and chronic interstitial splenitis.

In the whole series of cases, 40 were diagnosed senile psychoses. Twenty-eight of the cases so diagnosed showed miliary plaques, 70 per cent. All of these cases showed memory and judgment defects, the degree of deterioration being more extreme in the cases with plaques. The average age of onset was 68.7 years in plaque cases against 66.9 in non-plaque cases; the age at death was 74 and 71 respectively. Physically the plaque cases showed more of the symptoms of organic cerebral involvement, and the frequent occurrence of cardiac lesions was also striking. All of the senile psychoses showed brain atrophy either focal or general, but the weight of the plaque brains was less than the weight of the non-plaque brains.

All but one of the plaque cases presented brain atrophy. This case was diagnosed clinically involution melancholia and was 61 years old. The most atrophic brain of the series, 700 grams from a female, showed miliary plaques. Nine male brains and five female brains presenting plaques were within the accepted normal weight, but all showed atrophy with the exception of the involution case just mentioned; four of these showed hemorrhage into the ventricles or brain substance and eight showed edema of the pia; both of which conditions account for increased weight in the presence of atrophy. It may be fair to state then, that all but one

plaque brain showed decrease in weight, atrophy in itself being an index of the decrease.

Forty-four of the 58 elderly cases without plaques showed brain atrophy; 23 showed normal weight brains, but atrophy was present in 16 of them. It is of interest to note here, that none of the 14 non-plaque cases without atrophy were clinically senile psychoses.

So over 97 per cent of the plaque brains showed macroscopic atrophy against 75 per cent of the non-plaque brains in elderly cases.

All but four of the plaque brains show macroscopic cerebral arterio-sclerosis. One which did not show arterial degeneration at autopsy demonstrated it microscopically. Thirteen exhibited either cortical softenings, medullary softenings or lacunar softenings in basal nuclei; four were apoplexies; and four had internal hemorrhagic pachymeningitis. All but six of the non-plaque elderly cases presented cerebral arterio-sclerosis at autopsy. Sixteen exhibited either cortical, medullary or lacunar softenings in basal nuclei; three were apoplexies; and five had internal hemorrhagic pachymeningitis.

Arterio-sclerotic lesions, then, occur in 47 per cent of the plaque brains and in 34 per cent of the non-plaque brains.

This gross anatomical analysis shows that atrophy is almost always present in plaque-containing brains while it is quite commonly absent in non-plaque brains, even in elderly cases; and that arterio-sclerotic lesions are more often found in plaque brains than in those not demonstrating plaques.

Sections from the frontal, central, paracentral, occipital, hippocampal and orbital convolutions, and the basal nuclei of the cerebrum; the cervical cord; and the cerebellum were examined in each case. When areas of softening existed, sections of such tissues were examined in an effort to determine their relationship to plaques. Atrophic areas were also given special attention.

Bielschowski's silver impregnation method, the Levaditi silver method as employed by Hauptmann, hematoxylin and eosin after alcohol and May's modification of Zenker's fixations, Pappenheim's plasma cell stain, Mallory's glia stain, Nissl's stain, Herxheimer's fat stain as modified by Lambert, and Mayer's stain for amyloid were used in the preparation of sections for microscop-

ical examination in these cases. The Levaditi method and the Bielschowski method best demonstrate the plaques. In one case plaques were demonstrated by the Levaditi when none were brought out by the Bielschowski. In nearly all cases the Levaditi stain brought out the plaques in larger numbers and in greater variety than the Bielschowski. It should be used in all senile, presenile, arterio-sclerotic, brain syphilis and general paralysis materials as a routine procedure. Hematoxylin and eosin demonstrate the foci in nearly all cases, but does not give the detail or contrast given by the silver methods. Mayer's stain for amyloid was used in an effort to determine the relationship between corpora amylacea and miliary plaques, if any such relationship existed.

The so-called miliary or senile plaques are minute foci of tissue alteration usually irregularly circular or oval in outline, measuring from 10 to over 100 micra in diameter. There are several types. The one which is most common and which is here regarded as the mature type of plaque has a homogeneous, darkly stained mass at its center larger than a nerve cell and circular in outline. This mass takes the scarlet fat stain. It often appears brown in Bielschowski and Levaditi preparations. Sometimes two or three distinct masses are present with clear spaces or channels between. About the central darkly staining mass there may be a comparatively clear space or court. This court is as often not present. Then extending from the central mass to the periphery of the plaque is a zone in which a variety of altered structures are manifest. Fragmented fibrils, neuroglia and nerve fibrils, granular amorphous material, degenerating nerve cells and neuroglia cells, fat granule cells and pigment granules are found in this zone. Many times axis cylinders are seen to traverse the zone in the same plane without apparent injury; and again coarse, club-shaped twisted fibers are present, disposed radially from the center of the plaque resembling actinomycosis formations suggested by Achucarro. Peripherally the plaques seem to be enclosed in a fairly defined ring of dark fibres, which, as apparently isolated formations, lie in unstained tissue. The encapsulating neuroglia reacts to the plaque as it does to foreign bodies, softenings and corpora amylacea. The presence of rod cells in the vicinity of the periphery of plaques is unusual in this material.

Another type of plaque best demonstrated by the Levaditi process, and regarded as a step backward in the genetic development, contains no central mass or pericentral zone. It consists only of coarse black fiber network, which is more loose and may be followed for a greater or less distance into the unstained tissue. In successive stages the network is seen to become more loose and finer, and the peripheral thickening is diminished in compactness until the ground substance shows as a reticulum in which a net of brownish yellow fibers stand out alone. This is the so-called fassernetz type. By the Levaditi method isolated minute stellate forms and spread-out, irregularly outlined fiber networks appear to be the earliest manifestations of the plaque development. By the Bielschowski method the early types are larger and appear as focal necroses or pathological deposits of homogeneous material spread over 100 or more micra and without apparent surrounding neuroglia reaction. In succeeding stages the peripheral neuroglia reaction is more and more developed and the area shrinks to the mature type.

All of the types mentioned are often found in the same case. They are frequently in the same field lying side by side; but as a rule each area examined has a type of plaque which more or less prevails over all other types. One is led to believe from the variety of plaques and their apparent gradation one into the other, that the different types of plaques indicate different stages in the development of one type of mature plaque.

Topographically the plaques are found in the frontal, hippocampal, central, paracentral, occipital convolutions, and the basal nuclei in the order of the frequency of their occurrence. Aside from plaques this is the order of the histological changes in the brains of aged persons. They were also found in the orbital, temporal and parietal convolutions, but not all of these regions were systematically searched in each case. No plaques were found in the cerebellum or in the cervical spinal cord. The largest plaques were generally found in the hippocampal cortex.

Plaques appear to be largely confined to the cortex or gray matter, comparatively few being found in the white marrow. Rarely plaques seem to approach the pia or surface of the cortex. They are occasionally seen in the deeper portions of the molecular layer and one may extend well into the middle of this layer, but seldom

to its surface. Most of the plaques lie in the nerve cell bearing strata; more in the layer of small pyramids than in any other layer. The plaques which do occur in the white matter generally lie close to the last nerve cell bearing strata of the cortex, where there are occasional nerve cells still found. However, plaques have been rarely seen in the middle of the stalk of a convolution far from any nerve cell bearing tissue.

Attention has been directed to the frequent relation of the plaques to blood vessels. In this series capillaries coursing directly into plaques and apparently ending there have frequently been encountered, and in nearly all sections capillaries have been seen in close relation to plaques. In the Levaditi preparations, especially, an interesting condition is demonstrated. On either side of small vessels and capillaries there are seen quite wide strips of altered neuroglia. The structure and appearance of these areas are very similar to the fassernetz type of plaque. Whether or not this reaction about small vessels has any significance as to plaque development remains to be worked out. On the other hand, perhaps as many plaques without demonstrable vessel or capillary relations are also present. This does not dispose of the possible vessel relationship, however. The vessel might or might not appear in the section, the direction in which it is cut making the difference; or the section might be made from the extreme periphery of the plaque. This relationship or lack of relationship between vessels and plaques might be determined by making serial sections of pieces of tissue containing plaques.

Occasionally instances of the coalescence of two plaques have been found. When this occurs the plaques involved have been of the early type and have had no appreciable neuroglial encapsulation.

The association of plaques with Alzheimer's intracellular neurofibril alterations occurred in only four cases in this series. In two cases the intracellular neurofibrils were altered and thickened, but no basket formations and whorls were present. These alterations were most often found in the small pyramidal cells in the frontal cortex, the frontal convolutions in each case being extremely atrophied. This finding is in marked contrast to Barrett's findings in a series of eight plaque cases, five of which showed the neurofibril alterations, and Fuller's findings in a series of 16

plaque cases, eight of which showed the Alzheimer alteration. That there may be an etiological relationship between plaques and this neurofibril alteration is suggested, but the hypothesis that nerve cells disintegrating with neurofibril changes form the basis on which plaques develop does not appear tenable when only four out of 36 plaque cases showed the neurofibril alterations.

In the majority of cases plaques were most numerous in the convolutions showing greatest atrophy; but on the other hand, many cases with extreme atrophy did not demonstrate plaques.

Sections which showed arterio-sclerotic softenings did not demonstrate more plaques than sections without.

Corpora amylacea were present in nearly all of the cases, but their location and number differed so much from the location and number of the plaques that they cannot well be considered as having any connection with the plaques. They were so numerous in the cord and cerebellum where no plaques were demonstrated that relationship seems at best far distant.

Microscopically the sections from the senile plaque brains did not differ materially from the sections of the senile non-plaque brains except for the presence of the plaques. They all showed characteristic senile changes. The pia was generally thickened to several times its normal thickness by fibrous tissue and endothelial cell proliferation. Fibroblasts were numerous in the connective tissue mesh, occasional lymphoid cells, some kornchenzellen, rarely mast cells and very rarely a plasma cell. The walls of the pial and cortical vessels showed varying grades of changes. Most of the vessels showed regressive processes, though some of them seemed to be thickened concentrically. The Bielschowski process showed a fibrous network in the walls of many of the smaller cortical vessels. In some instances this structure was differentiated with difficulty from the basket formations and whorls of the Alzheimer neurofibril alteration. The molecular layer showed a thickening of the neuroglia felting. Corpora amylacea were usually present beneath the pia. A few were seen in the deeper layers in relation to vessels. They are numerous in the posterior columns of the cervical cord. Neuroglia nuclei were increased in number throughout the cortex. Satellitosis was moderately developed in a few cases, but was insignificant and inconstant. A few rod cells were scattered about promiscuously. In

most of the cases the nerve cells in the layer of small pyramids were diminished in number. Their cell bodies were shrunken and distorted and stained diffusely with the Nissl stain. The larger pyramids and Betz cells showed pigmentary alterations, in some instances the pigment occupying the whole cell body. Many of the nerve cells showed large vacuoles and others stained so faintly that they were mere shadows.

From this material and that already reported in the literature by several authors the following deductions may be made:

A large proportion of the cases diagnosed clinically senile psychoses (70 per cent in this series) demonstrate miliary plaques.

There are some senile psychoses whose brains do not demonstrate miliary plaques, but show the other characteristic changes of senile involution; although Barrett makes the statement that "the absence of plaques or their occurrence in few numbers is against the presence of senile dementia."

Cases which course clinically as senile psychoses but develop in the presenile period, generally demonstrate Alzheimer's intracellular neurofibril alterations in the pyramidal cells of the most atrophic convolutions in addition to miliary plaques and other histopathological involution changes.

Plaques are found in psychoses of long duration in patients of advanced age, but which are not originally senile psychoses. This may be an argument in favor of superimposed senile dementia.

Plaques are seldom found outside of the senile period; though Alzheimer found them in a case of tabes, aged 31, without a psychosis.

They have been found in old cases who have had no psychoses.

The rare occurrence of the presbyophrenia symptom complex in these cases is strong argument against the statement of Fischer that plaques form the anatomical basis of presbyophrenia; and there is no apparent reason for attributing to plaques a bacterial origin, though the possibility of a toxic origin is admitted.

Brains in which plaques are found generally exhibit macroscopic arterio-sclerosis and a large percentage exhibit gross focal lesions resulting from arterio-sclerosis. But arterio-sclerosis and arterio-sclerotic foci also occur in brains without plaques and cannot be regarded as direct factors in plaque development.

All but one of the plaque brains in this series exhibited either general or focal atrophy, although some were within the accepted normal weight. In most of these brains the atrophy was most marked in the frontal convolutions, the region which was most productive of plaques. Senile brains not showing plaques also exhibited atrophy, in some instances an extreme degree.

The order of the frequency of the occurrence of the plaques in the convolutions of the cerebrum was as follows: frontal, hippocampal, central, paracentral, and occipital. Some were found in a few instances in the basal nuclei. No plaques were found in the cerebellum or in the cervical spinal cord.

Different stages in the development of plaques may be demonstrated.

The duration and severity of the psychosis have no apparent relation to the stage of plaque development in this series, though Barrett noticed such relationship.

The Levaditi method as used by Hauptmann demonstrates greater numbers and more varieties of plaques than any other method known to the author.

THE DIAGNOSIS OF THE HIGHER GRADES OF MENTAL DEFECT.

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Many factors have contributed to the present keen interest in everything pertaining to the feeble-minded, both in Europe and in this country. The realization of the vast extent of mental defect, the inexorable requirements of the modern graded school systems with the study of the resulting retardation, the significance of feeble-mindedness as an antecedent and cause of delinquency, crime, pauperism and other social diseases, the popular application of the Binet and other psychological tests and the comparatively recent discovery of the markedly hereditary nature of feeble-mindedness, are some of the causes of this interest.

Feeble-mindedness has become a subject of vital and pressing significance to physicians, teachers, court officials, social workers and legislators. The subject is being studied from medical, biological, pedagogical, psychological, sociological, economic and eugenic points of view.

The field of mental defect has been so broadened and extended as to include large groups of persons who would not have been so included even a decade ago. Naturally this extension has been almost entirely in the higher grades of defect.

A medical diagnosis of feeble-mindedness is necessary before a case can be properly or legally considered with reference to care, treatment or prevention. The practical importance of this pertinent subject is the excuse for this paper.

During the past twenty years over 3000 cases of suspected mental defect (an average of three a week) have applied to the Massachusetts School for the Feeble-minded for diagnosis, prognosis and advice as to treatment and care. These patients were generally referred by physicians, charity and social workers, child-helping societies, court officers, etc. As a rule the cases seen in this out-patient work are of the high grade "moron" type, often

not obviously defective. Often a wide difference of opinion has been expressed by different physicians. Some of the cases have a criminal or court record. Cases of ordinary evident feeble-mindedness are not usually so referred. These cases evidently differ from the general run of presumably defective persons presenting themselves to a school physician or to a general medical clinic.

In this class of cases a diagnosis is usually sought for the purpose of deciding the patient's future. Is he normal or mentally defective? Is he able to attend the public schools or to go to work? Will he eventually be self-supporting? Shall he be held responsible for his criminal or immoral conduct? Is he a suitable case for adoption? The question of the suitability for marriage is sometimes involved. The diagnosis is of enormous importance to the patient and to his family. A wrong diagnosis is embarrassing to the physician and tragical to the patient.

The diagnosis of ordinary cases of idiocy and imbecility is a simple matter. Even the high-grade cases occurring in childhood present few difficulties. The upper levels of the so-called moron grade as seen in late childhood, and adolescence, are often most perplexing and difficult.

An accurate and incontestible diagnosis of one of these borderline cases can be satisfactorily made only after a thorough physical examination of the patient, knowledge of the family history, personal history, especially the story of his infancy and early childhood, school history and records, social and moral reactions, sexual habits, emotional stability, associates, interests, and the fullest inquiry as to his general information and practical knowledge. Appropriate psychological investigation by formal tests is especially indicated in these doubtful cases. The recent literature of the subject abounds in most elaborate and voluminous syllabi for routine examination and record, but a simple record of significant positive and negative findings is the most practical for diagnostic use. More than one examination is often required. It may be necessary to place the patient in a selected environment where his behavior and reactions may be carefully watched by a competent observer for a period of weeks or months before a final diagnosis and prognosis can safely be made.

A carefully written history of the case, prepared in advance by the parent, social worker or physician, saves time and often

presents facts which otherwise would be omitted or distorted. This statement of the case should include the reasons for thinking the patient mentally defective.

A physical examination will reveal any existing deformities and abnormalities—paralysis, scars, or other evidences of injury, especially to the head; the condition of the eyes, skin, hair, thyroid gland and sex organs; evidences of syphilis, rickets, etc. Height and weight with reference to the age is of importance. The circumference of the skull and the cephalic index should be noted.

The presence or absence of certain physical degenerative stigmata is significant, such as abnormalities in the size and shape of the cranium; abnormal variations in the size, shape and relative position of the ears; facial asymmetry, disproportion and lack of expression; the form, situation and structure of the teeth, etc. One or more cranial or physical developmental defects are generally found even in the slighter degrees of defect, especially if the case is of hereditary type.

Even the highest types of mental defect may have a certain degree of defective motor ability, as shown by awkward gait, clumsy movements and bodily attitudes, and a lack of alertness and dexterity. They often lack the physical grace and charm of well-formed normal youth. The performance of a sequence of movements requiring precise muscular co-ordination adapted to the age and apparent mental ability of the patient will show his co-ordinative ability.

The general personal ensemble is worth considering. The physical appearance, facial expression and attitudes, and the general bearing of the patient are factors to be noted. As a rule, mental defectives are not physically attractive or pleasing in appearance. A bright, alert, active, well-formed, attentive youth is usually not feeble-minded. The general impression of associates and neighbors of the patient as to his mental efficiency or inefficiency is often illuminating.

It should be remembered that no family history almost always means a bad heredity. The family history should be verified and amplified by someone outside the immediate family. The modern social worker has greatly simplified this part of the problem. There is a strong tendency on the part of relatives to suppress the suggestive existence in the family of other cases of mental defect,

epilepsy, insanity, specific disease, criminality, immorality, social and economic inferiority, etc. Such vicarious manifestations of family inferiority are most significant in view of the fact that presumably 80 per cent of defectives come from feeble-minded families.

The personal history, if obtainable, should chronicle injuries or accidents at birth, the order of birth (whether first or last child in family), diseases, accidents, convulsions, the age at which patient was able to sit up, to stand, to walk, to button clothing, the age at which he began to talk, the time when the first symptoms of mental defect were noticed, etc. Some cases with very slight mental defect are persistent bed-wetters up to adult life.

The unmorality of the feeble-minded is proverbial. The ability to appreciate in theory as to what is right or wrong is not applied in practice to their own conduct and actions. Inquiry should be made as to a history of general moral insensibility, untruthfulness, theft, cruelty, destructiveness, truancy and vagrancy, etc., in varying degrees. The presence or absence of sex precocity, sex perversion and sex immorality is very significant.

Allied to the unmorality of the high-grade imbecile are the various anti-social tendencies often expressed by selfishness, egotism, excessive vanity, absence of shame, general incorrigibility, lack of affection and lack of sympathy.

The pedagogical history as shown by a detailed account of school life and progress is most important evidence. The school record will tell the age at which patient began to attend school, the number of years in each grade, the present grade, school performance, with samples of his written work, and often a full and detailed account from his teachers of his successes and failures. Lack of educational advantages, unfamiliarity with the language, absences from school due to truancy, illness, or lack of interest on the part of the parents, have a bearing on the rating of the school performance. As a rule, the family blames the teacher or the school for the retardation. The teacher's report will usually tell a story of inattention, lack of ability to discriminate, or want of sustained interest and application. Retardation amounting to three years below the age grade, with no handicap of ill-health or unfamiliarity with the language, etc., is strongly suggestive of mental defect.

The social reactions should be carefully noted. Has the patient made good socially for his station in life? As a child, did older children accept him as a playmate on terms of equality? Was he teased, or abused, or "picked upon" by other children, especially by those younger than himself? Is he annoyed and teased by his fellow workmen? Does he associate with his social equals or with his inferiors? Does he associate with and play with younger persons? Does he make friends easily? Does he attend church and Sunday school? Did he at the usual age receive first communion or confirmation, or its equivalent? Does he observe the usual amenities and social conventions of his station? Is he treated as politely as other young men by young persons of the opposite sex? Does he attend and take part in parties and other social occasions?

The practical personal examination of the patient for subjective criteria of mental capacity and ability should be conducted without the presence of parents or other friends. And here again, no formal syllabus can define the line of inquiry to be followed in a given case. The queries must be varied to fit the age, sex, educational, social and environmental advantages, personal interests and experiences, personality, degree and type of defect, etc. If the patient is cordially put at ease and encouraged, he will usually tell all about himself, his sports, work, friends, hopes and plans. The city gamin and the country boy will have entirely different interests. Girls are likely to have had meagre view-points and opportunities. "Boarded-out" and "charity" children as a rule have barren experiences to draw from. Medico-legal cases may have been carefully coached not to know or not to remember.

Incidentally, the inquiry should demonstrate the patient's power of attention, judgment and common-sense, veracity, discrimination, constructive imagination, etc., as well as his stock of general knowledge and information, and actual scholastic ability. Does he know what he ought to know, and can he do what he ought to do?

The following questions, always varied or modified to suit the particular case, only indicate the general line of inquiry likely to show the mental capacity and ability. The answers elicited will suggest further queries.

How old are you?

Where do you live?

Is it a city or a town?
 How far from Boston (or the nearest large city)?
 What is the railroad fare from Boston?
 What towns are near your own town?
 What year were you born?
 How old are your brothers and sisters?
 Name some large cities in Massachusetts.
 What is made in Lynn, in Lowell, in Waltham?
 Name some rivers in Massachusetts.
 Name some mountains. Where are they?
 Who is Governor of Massachusetts?
 Who is President of the United States?
 Do you read any newspapers? Which ones? Which departments?
 What news in the papers recently?
 What books have you read? Tell the story of one.
 How high is this door?
 How tall are you?
 How much do you weigh?
 How long is this pencil?
 Who is the King of England?
 Do you play baseball? What position?
 Did the Red Sox win yesterday? What was the score?
 Who was the pitcher?
 What was your mother's maiden name?
 What did you see on your journey this morning?
 What job would you like?
 Where have you worked?
 Why did you leave your last job?
 What did you like to do best?
 What wages did you get?
 What wages does a carpenter get? A cook? A waitress? etc.
 What does a pair of shoes cost? A hat? Gloves?
 Name some flowers, vegetables, animals.
 What size shoe do you wear?
 Describe streets, mills, buildings, etc., in your town.
 How long would you boil an egg?
 How long would you bake a potato?
 How much does a baseball cost?

The scholastic ability should be actually tested by ordinary examination in the studies of the usual school grades. The patient reads from a school-book and copies a story. Oral and written sums may easily be devised to measure his arithmetical ability. All grades of mental defect show poor arithmetical skill. They may add and multiply, but usually subtract with difficulty. They may do short division, but few can achieve long division, except after long training. Any practical arithmetical computation at all involved is quite beyond the brightest defective. Few can solve the problem:

If I give you a dollar and you go in town on the electric car and pay your fare and return, and buy stamps for three letters, how much money will you have left?

He may know the amount of the car fare and the price of stamps, but he cannot do the sum.

The general scheme of inquiry and examination so far described was in general use before the application of psychological tests for estimating mental efficiency and capacity. Definite psychological tests in some form are now an essential and practical part of the examination of suspected cases of mental defect, especially with the higher grades.

The Binet tests, in the hands of competent examiners, usually corroborate the results of clinical examination in the recognition of all degrees of mental defect in children under ten, and of pronounced defect in older persons. These tests are not so effective in detecting slight mental defect in world-wise adolescents and adults. In other words, the Binet tests corroborate where we do not need corroboration, and are not decisive where the differential diagnosis of the high grade defective from the normal is in question.

The Binet tests are not supposed to furnish an index to the *education* of the individual, but to measure his *capacity for education*. But would not many ignorant normal persons fail to be able to tell the difference between pleasure and honor, evolution and revolution, event and advent, poverty and misery, pride and pretention, as required by the adult test?

The revised Binet tests require a person to listen to the following story, and then to repeat its substance:

One hears very different judgments on the value of life. Some say it is good, others say it is bad. It would be more correct to say that it is mediocre; because on the one hand it brings us less happiness than we want, while on the other hand the misfortunes it brings us are less than others wish for us. It is the mediocrity of life that makes it endurable; or, still more, that keeps it from being positively unjust.

The words "mediocre" and "mediocrity" are usually unfamiliar to any person likely to be examined for mental defect.

The Binet tests are psychological experiments and to give results of definite value should be conducted with all the precautions against error which are observed in other psychological experiments. There is still some question as to the invariable fairness of these tests, in subjects with which the patient has had no practical experience, as a measure of native mental ability. The mere appearance of the unfamiliar apparatus or test material may so confuse the patient that he will not be able to do himself justice. The results of any formal tests should accord with clinical findings and with pedagogical measurements and social and economic reactions. The determination of mental defect cannot be made by the automatic application of any method and scale. In the borderline adult cases the Binet tests are of value as *additional evidence*, but they are not conclusive and should not be relied upon in the absence of clinical and other evidence.

The Binet test does not register as defective certain persons who present plain evidence of mental defect in their personal history, school history, and performance, social and economic reactions, etc., while on the other hand, certain individuals who fail to come up to the requirements of the Binet test do not present the usual personal, social and economic reactions of mental defect.

The layman, especially the social worker and the teacher, is profoundly impressed with the findings of any formal tests. The facility with which the pronounced case of mental defect can be roughly indicated with these tests is largely responsible for the present great popular interest in feeble-mindedness.

The Binet tests are most effective as first aids to teachers and social workers in selecting suspected cases to be referred to the physician.

A bit of personal experience illustrates the difficulty of eliminating irregular test conditions, and the futility of absolutely follow-

ing any system of scoring. On one of my out-patient days, I had examined eight patients, one after the other. I had no luncheon and was fatigued physically and mentally. At 5 o'clock a social worker insisted that I examine, as I had agreed to do, her 15-year-old patient. I pleaded weariness and disinclination, but finally decided to give the Binet tests. The patient had waited hours for her examination and was tired and unhappy. After much effort she utterly failed to achieve the 10 or 11 year Binet tests. I declined to give an opinion, but made another appointment for the next morning, when, after the patient had been put at ease and got acquainted, she readily tested up to her full age. The result the night before was really a record of my own mental state.

Healy has formulated a tentative series of psychological tests for the estimation of native mental ability and the results of formal education in adults and adolescent delinquents not definitely feeble-minded. They are of great practical value in demonstrating various shadings of the borderline zones of mental defect, as well as certain types of delinquent personality not yet generally recognized as variations of mental deficiency or of limited responsibility. The generalizations from the application of this admirably flexible and comprehensive method of examination should furnish data of great value in diagnosis and classification.

The differentiating tests of Dr. G. G. Fernald form another notable addition to the methods of scientific precision for the diagnosis of variations of lesser mental defect as found in adolescent delinquents, presumably differing in no way from the degrees of defect in non-criminal individuals.

Dr. Healy and Dr. G. G. Fernald both emphasize the fact that the application of psychological tests should not constitute the exclusive method of examination, but that it is one method available among others, and to be supplemented by them. Indeed, as Dr. Fernald says, in the present state of our knowledge any attempt to classify any group of subjects based solely on the findings from psychological tests would commit grave errors.

Practically all of the special tests for the diagnosis of doubtful cases that are not decided by usual tests are of doubtful value because no age norms are given, and no practical method of scoring worked out. We can draw no exact conclusions from the

results of tests in any given case when we do not know what results we would get with these tests on normal persons. Absolute standards should be used with great caution. There are many grades of intelligence among normal people. Normality of intelligence is not a fixed strength of intellect, and feeble-mindedness is not merely a question of intelligence.

The psychologists have been so interested in the diagnostic application of the Binet and other tests that while we are now familiar with certain rather empirical negative age standards and landmarks applicable to children and to cases of pronounced defect, we still possess no really scientific understanding of the exact psychological status of the ordinary cases of feeble-mindedness. We know that these different groups are, in varying degree, low in the power of voluntary attention, in discriminatory power, in constructive imagination, etc., but we know this only empirically, not in terms to be expressed qualitatively and quantitatively. The psychology of mental defect is yet to be written. The patient work of G. E. Johnson, Kuhlman and Norseworthy along these lines should be followed up by intensive psychological study and analysis of a large series of carefully selected cases. The work cannot be done adequately in a small institution laboratory but requires the personelle and the resources of the psychological department of a great university. Such research would accumulate data for generalizations which would form a basis for the formulation of tests of enormous value in the diagnosis of puzzling cases, especially of the borderline class. It is probable that the scientific mind will not be content until these upper zones of mental defect have been explored and charted, and definite diagnostic tests evolved.

From a clinical point of view the borderline case of the "moron" grade differs from the case of actual imbecility quantitatively rather than qualitatively. Even in cases with very slight mental defect some of the cardinal symptoms and conditions of imbecility are usually found in lesser degree. There are generally evidences of physical inferiority, certain physical stigmata of degeneracy and defective muscular co-ordination. There is usually a history of delayed dentition, late walking, delayed speech and relatively long continuance of untidy habits. The patient lacks the appearance of expression of normal mentality. There

is usually a history of mental defect or disease in the family. Unmoral and anti-social tendencies are rarely absent. There is a history of school retardation and poor scholastic ability on examination, with special difficulty in arithmetical and practical computations, and lack of general knowledge and information. The patient is unable to apply himself continuously in any one direction and is willing to risk severe penalties for some very small gain. His actions and conduct indicate a lack of good common sense.

These facts and observations may usually be corroborated by psychological tests, but there is no justification for the popular belief that a psychological examination alone will quickly, accurately and fully determine the degree of mental efficiency or inefficiency, educational and social needs, and the prognosis of patients who have puzzled and baffled parents, teachers, family physicians and alienists.

Not all or even a majority of these various physical, psychical, social, ethical and economic stigmata are likely to be found in every case of actual mental defect of the higher grade. Mental defect has not yet been proven to be an homogeneous entity. The various signs and symptoms are found in infinite variety in varying degree and proportions in different cases. Certain persons who are not more than one year retarded as shown by the Binet tests are undoubtedly so mentally deficient as to be obviously "incapable of managing their own affairs" as shown by their long continued social, ethical and economic failures.

A given case must be finally decided after a careful weighing of all the evidence which any reputable method of examination and weighing can furnish.

The Binet tests assume the twelve year mental age as the upper limit of feeble-mindedness because observation and test showed that people of any higher intelligence are usually able to float in society. And, after all, the ability of a man to earn a living, to maintain himself independently in the station of life in which he is born is the one supreme test of mental normality. If a man can secure a paying job and keep it, and satisfy his employers, it is extremely unlikely that he is mentally defective. In cases which cannot be definitely decided, the patient should usually be

given the benefit of the doubt and allowed to work out his own problem under the best conditions attainable.

In these practical generalizations from the study of a large number of cases, the writer has sought to indicate the general lines of investigation which have been found useful and necessary rather than to enumerate all the signs and symptoms of mental defect which were revealed, or to present a mass of formal statistics.

DISCUSSION.

DR. BRIGGS.—I would like to call attention to the connection between this paper and Dr. Work's report yesterday morning. Such papers as this are going to help the physician in determining diagnoses of cases. In the State of Massachusetts they are calling on the State Board of Insanity to prepare a report making recommendations in regard to this matter. The State Board have a meeting next Monday, at which time there will be a discussion as to what impediments should be placed on marriages of mental defectives. I think this question is a very vital one. I understand that the Roman Catholic church is coming out strongly against restriction of marriage. It is against its belief to prevent marriage or to sterilize, and it will probably take an active part in these questions.

CLINICAL AND ANATOMICAL ANALYSIS OF 25 CASES
OF MENTAL DISEASE ARISING IN THE FIFTH
DECADE, WITH REMARKS ON THE MELAN-
CHOLIA QUESTION AND FURTHER OBSERVA-
TIONS ON THE DISTRIBUTION OF CORTICAL
PIGMENTS.*

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* Number 40, Danvers State Hospital Contributions.

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I. INTRODUCTION.

It is well to say at the outset of this communication that the facts presented—in either of the two main lines of consideration—cannot be fully understood until a similar analysis has been made of those insanities arising in previous decades. The two main lines of consideration are these: (1) an attempt to describe the chief clinical features of mental disease arising at different epochs in life and in some sense *genuinely* characteristic of said epochs, and (2) an attempt to secure a histological basis for metabolic changes and age-changes as shown in the distribution of certain special pigments in various types of cell (nerve-cells, neuroglia-cells, perivascular phagocytes) in subjects of different ages, as modified by the occurrence and duration of various mental diseases.

Both of these inquiries have been sketched in previous work from the Danvers laboratory. With H. W. Mitchell, one of the present writers (E. E. S.) read before this association in 1908 a paper entitled "Clinical and Anatomical Analysis of 23 Cases of Insanity Arising in the Sixth and Seventh Decades with Especial Relation to the Incidence of Arteriosclerosis and Senile Atrophy and to the Distribution of Cortical Pigments." Of course there is no reason to suppose that a division of human life into decades has any ultimate value as the basis of grouping morbid entities. But there is as yet lacking any other age-division superior to the decennial division, and it is clear that, if a complete analysis of a sufficiently large material from all the decades be made, no case-types will escape investigation and a picture of progressive disease-liabilities varying with age can be drawn. In point of fact, Southard and Mitchell had in a paper¹ preceding the one mentioned above (Melancholia with Delusions of Nega-

tion: three Cases with Autopsy) tried to investigate what has proved to be the main topic of the present paper, viz., involution-melancholia, by choosing cases on ordinary clinical grounds and endeavoring to decipher their cortex-histology. But the necessity of a broader field of view became at once apparent, particularly when we came to consider the distribution of pigments there studied.

But, although we had begun with clinical differentiae (Cotard's syndrome) and desired to work especially on the cortex-metabolism (so far as histologically workable in the pigment field) in involutional insanities, we found that we had first to clear away the difficulties of the senile and subsenile period. In effect in their second paper,² dealing with insanity arising between 50 and 70, Southard and Mitchell felt that those senile and subsenile difficulties had been at least in part resolved. We stated categorically, on the basis of that study, that

neither old-age changes nor arterial disease have any necessary connection with the development of insanity in the later years of life, at least in the sixth and seventh decades. It seems probable that *arteriosclerosis*, *senility*, and various forms of *insanity*, are entities which frequently interpenetrate, but are logically and genetically quite separate.

We were thus better prepared, as it were, to *climb down* from the senium and the subsenium to the still more obscure level of the pre- and post-climacteric in women and to the possibly allied difficulties in men as shown in the fifth decade (mental diseases arising from the 41st to the 50th year inclusive).

We need not rehearse in this introduction the tentative conclusions concerning pigment-distribution presented in either of the previous papers, but will speak further of them in our conclusions. They do not necessarily concern, either to strengthen or to invalidate, our clinical studies, but form a separate branch of biological inquiry taking their rise in the neglected field of Bevan Lewis (1890).³ The work has been stimulated by the recent lipoid work of Alzheimer,⁴ although his special methods have not been employed. We have dealt as before with certain pigments or pigment-like bodies brought out by the iron-hematoxylin method of Heidenhain.

We first present a condensed analysis of the total material from which our special material has been chosen, follow with casuistic

analyses in the chosen series, and conclude with separate sections on the special and general problems touched.

II. THE GENERAL DISTRIBUTION OF DISEASE FORMS IN THE FIFTH DECADE MATERIAL.

From 871 consecutive autopsies (Danvers Series, No. 729 to 1600) we selected those in which the onset of the first mental trouble came in the fifth decade.

TABLE I.—MATERIAL.

No. 729 TO 1600 OF D. S. H. AUTOPSIES.

Consecutive autopsies	871
Onset of insanity at 41 to 50.....	124
General paralysis	62
Syphilis of brain	2
Tumor	6
Meningitis 1, septicemia 1, central neuritis 1.....	3
Other coarse brain lesion; introductory shock..	9
Alcoholism	12
No history	5
<hr/>	
Total ruled out.....	99
<hr/>	
Leaving for consideration.....	25

A group distinguished by lack of all the above factors (the above factors are not peculiar to this decade).

We found that we had to deal with 124 cases arising between the ages of 41 and 50. Of these 62 were general paretics. There were two with cerebral syphilis, and six with cerebral tumor; one with central neuritis; one with meningitis; one with septicemia. These groups, 58 per cent, were laid to one side, with the feeling that not among them could the special characteristics of any decade be found. Five cases where no history could be found were added to these, leaving us with three groups, an alcoholic group, an arteriosclerotic group, and a remainder.

The alcoholic group of twelve cases we set aside because of the difficulty in locating the onset as well as on the supposition that here also little would be found of special interest for our chosen decade.

And lastly we separated out a group of nine cases where arterial disease was evident at the outset. Seven of these cases were post-apoplectic, one followed cerebral aneurism, and one began with hour-long periods of unconsciousness, convulsive attacks, death with gangrene and cerebral softening. With some reluctance we postponed the study of this group, but with the feeling that the cerebral insult masked the facts we were seeking.

Our remainder was found to consist of 25 cases which probably were associated neither with gross brain lesion nor with alcohol. Here, if anywhere, would lie the essential characteristics of psychoses of insanities arising in the forties. (See Table I.)

III. MATERIAL AND METHODS.

The special requirements of our investigation prescribed the material and methods used. We have, so far as possible in each case of the group chosen as above and described in brief in Section IV, considered carefully the following features:

(a) The *clinical history*, with especial reference to the age and character of onset (having practical prognosis particularly in mind), in women the relation of menopause to onset, and in all cases the duration of life and of mental symptoms.

(b) The *general autopsy findings*, as witness of general or special *metabolic disorder*, or *agonal* or *recent changes*, and of disorder of glands of *internal secretion*.

(c) The *condition of the gross brain*, as to the occurrence of softness, induration, atrophy (diffuse or focal), sclerosis, other focal lesions, and arteriosclerosis. With respect to the latter it will transpire that some few cases which gave no evidence whatever in the gross of arteriosclerotic disorder, exhibited extensive and important microscopic changes. These cases are duly noted below.

(d) The *condition of the brain cortex*, studied microscopically. The work here has no pretensions whatever to completeness and simply attempts to rule out or consider with particular care those cases where stains *for cell-topography* (e. g., a monochromatic methylene blue stain) exhibit cell losses. Particular care was taken to consider the occurrence of changes reminding one of those in senile dementia and in dementia præcox. No special study of the occurrence and distribution of the Redlich-Fischer

plaques has been undertaken for the present purposes. It is hoped to consider these lesions in a later communication in which the findings of the present paper can be correlated with those of Southard-Mitchell (1908).

(e) The *presence or absence and amount of* certain substances, here called *pigments*, demonstrable in the cortical cells by Heidenhain's iron-hematoxylin method after 95 per cent alcohol (or less advantageously) formaldehyde fixation. These have been studied in (1) *perivascular cells*, presumably i., as a rule about the larger vessels in cells of mesodermal origin (phagocytes), but ii., about some at least of the smaller vessels in cells of neuroglia type which resemble, if they are not identical with, satellite cells; (2) *neuroglia cells*, both in subpial layer and white matter and in the cortex-layers (satellite and other neuroglia cells); (3) *nerve-cells* of various types.

Remarks are offered in conclusion as to the possible significance of the quantitative and topographical variation of these iron-hematoxylin demonstrable lipoids. The study was conceived for the purpose of securing data concerning cortex-metabolism, using simple methods.

IV. CASE-MATERIAL.

CASE 1 is a married woman who had her first attack at 48 and died at 66 after four admissions to this hospital.

Her family history was negative.

At 48 she was apprehensive, suicidal, and had auditory hallucinations. Physical examination was negative. She was discharged as recovered.

On her return at 52, violent, agitated, depressed, it was noted that the menopause had been passed, but the exact time is left indefinite. After a period of sullenness, she became elated, then depressed again—always there was a trace of confusion. She showed exophthalmos and a very irregular and feeble heart. Again discharged as recovered.

At 56 she returned in an apparently manic confusion; she was cheerful and apprehensive by turns, and hallucinated. There was distinct exophthalmos, a pulse of 84, without enlargement of the thyroid; a tuberculin test was positive; albumen appeared in the urine. Discharged as much improved.

At 65 she appeared senile, dull, incoherent. She showed a great memory defect. Her heart skipped one beat in ten; there was much albumen in the urine. At 66, right sided shock with coma, death in two days (fever 102 at the time of shock).

AUTOPSY.—*The cause of death was cerebral hemorrhage.*

The brain weighed 1200 grams, and its substance was edematous. The basal vessels showed no sclerosis. The dura was everywhere adherent. The pia mater showed a slight general thickening, especially along upper border of cerebellum (spots of acute leptomeningitis). There was a hemorrhagic infiltration of the substance of the head of the left caudate nucleus and anterior third of the left internal capsule. (Staphylococcus pyogenes grown from area of hemorrhage.) Whether this was an area of encephalitis or a basal hemorrhage with invasion by staphylococci is doubtful.

ANATOMICAL DIAGNOSIS.

Hemorrhage in caudate nucleus and internal capsule (left).

Acute purulent pericarditis.

Acute purulent bronchitis.

Broncho-pneumonia.

Diploe densely congested.

Slight chronic leptomeningitis.

Marked external pachymeningitis.

Uterus much atrophied; many small fibromata.

Ovaries greatly atrophied.

Coronary and basal vessels smooth.

Aorta slightly thickened; a few small plaques.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation slight or absent.

Neuroglia cell pigmentation moderate to marked universally in nerve cell layers, less in plexiform layer.

Nerve cell pigmentation variable within small areas, moderate to excessive in degree.

Nissl picture shows cellular gliosis of white matter and plexiform layer, moderate variable or absent satellitosis in nerve cell layers. Foci of cell destruction, apparently of a globular shape, without especial neuroglia reaction, characteristic though infrequent in layers of large external and medium-sized pyramids (frontal, occipital). Occasional large external pyramid caught in process of destruction with satellitosis. Edema changes in various layers, especially supragranular nerve cells in occipital sections.

CASE 2 is a single woman whose mental illness began at 42, when she was brought to the hospital where she remained the rest of her life, dying at 50.

One of her sisters had fits. The patient had been a cheerful person of ordinary mental capacity.

During the menopause, at 42, she spent all night at the beach, "to hear the waves." The next morning she began to complain that an ointment had caused sickness everywhere, that bells and all street-cars had stopped because of it. Upon her entrance to this hospital a month later she still smelled the ointment "which had ruined the town"; "everybody in Lynn

was afraid to go out"; she could hear the cries of her family who were being murdered. She was clear; her memory was good. The menses were irregular, she had hot flashes, the uterus was atrophied, there was a pustular eruption on back, chest, arms, fingers. After 3 months considerable albuminuria. In nine months a marked exophthalmos was noted, with a fine tremor, and pulse of 120, but no apparent thyroid alteration. In a year after admission she said that she was to be judge of the world. A little later a tuberculin test is reported as positive. Eighteen months from the time at which they were first noted, the exophthalmos and tremor had almost disappeared and her pulse was 90; her memory was good; "she did everything wrong." A general physical examination in the 7th year of her residence showed her condition as good.

ANATOMICAL DIAGNOSIS.

Disseminated tuberculosis of both lungs.
 Chronic obliterative pleuritis.
 Tubercular ulcers of ileum and caecum.
 Chronic gastritis with healed ulcers.
 Multiple thromboses of iliac and pelvic veins.
 Atrophic liver (wt. 805 g.).
 Chronic splenitis (wt. 35 g.).
 Chronic diffuse nephritis.
 Chronic myocarditis.
 Slight mitral sclerosis.
 Emaciation.
 Ovaries atrophic.
 Chronic external adhesive pachymeningitis.
 Chronic leptomeningitis of vertex and cisterna.
 Compensatory edema of pia.
 Atrophy and sclerosis of frontal and central regions.
 (Aorta, coronary and basal vessels smooth.)
 AUTOPSY.—*The cause of death was pulmonary tuberculosis.*

The vessels of the base of the brain and elsewhere were of normal appearance. The dura was adherent to the calvarium at the vertex. The arachnoidal villi were moderately developed, particularly over the left central convolutions along the longitudinal fissure. The pia mater showed thickening over the veins in the neighborhood of the arachnoidal villi, and in the walls of the cerebellar cisterna, but nowhere else. The pia of the frontal poles and central regions of both sides contained considerable compensatory edema. The brain showed some variety in consistence, the frontal and central regions having most resilience, but was in general less firm than usual and suggested post mortem (30 hours) imbibition of water. The grey matter showed considerable pigmentation, especially of the vertex. The cerebellar laminae are slightly thinned out, most markedly in the clival and cuneal regions.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation moderate, more variation than usual in that the precentral tissue on both sides showed very little as compared with other areas examined. Some pigmentation of *endothelial cells in situ* in the left frontal region.

Neuroglia cell pigmentation moderate and universal in satellite cells of all layers (less in precentral gyri).

Nerve cell pigmentation not much in evidence except in the calcarine regions (more especially left) where there is considerable pigmentation, especially of the cells of the supracerebellar layers.

Subpial fibrillar gliosis, especially calcarine. Nerve cells well preserved. Whether the development of arachnoidal villi on the left side can have anything to do with the greater pigmentation on the left side cannot be said. No special study of the convolitional pattern or of differential weights was made; it seems hardly possible to account for the differences on the two sides on a vascular basis. Perhaps we have caught a progressive unilateral atrophy in process. It must be remembered that certain dementia præcox studies indicate that the left cerebral hemisphere is somewhat more subject to anomaly than the right.

CASE 3, a married woman, was admitted to this hospital at 50, recovered in eight months, was well at home for 24 years, and again came to this hospital at 73 to die in three weeks.

Her grandparents are reported normal, and her father. The mother, however, never recovered from an attack of melancholy which began at 48, and the only brother began to drink heavily when over 50. A maternal aunt was a senile dement. The patient herself was sensible, frank, cheerful, except for short spells of blues all her life. She had two children who are living and well, the youngest 35; menopause in late 40's with no mental symptoms. Development of right forearm arrested at three or ten years. At 49 received a burn which kept her in bed about a year.

At 50 she became depressed, hypochondriacal, suicidal, and was brought to this hospital. Soon recovering, the 24 following years found her "perfectly well both mentally and physically." In May, at 73, she was again restless and depressed, thought of suicide. In June, physical examination at this hospital showed a hardened radial, no tremor, a deformity of the right hand and arm (scar of burn), steadiness in Romberg's position, a right pupil slightly larger than the left. She was clear, apprehensive, self-accusatory, with flight: "I can't shed a tear," "my head feels as if it would burst," "are you going to cut my head, my arms and my legs off?" Symptoms of hemorrhagic cystitis appeared suddenly.

ANATOMICAL DIAGNOSIS.

Acute proctitis.

Acute metritis.

Hemothorax.

Chronic interstitial nephritis.

Arteriosclerosis of aorta, iliacs, coronaries, cerebral arteries.
 Slight valvular endocarditis.
 Hypertrophy of heart.
 Much epicardial fat.
 Chronic interstitial pancreatitis.
 Chronic hepatitis.
 Atrophy of spleen and stomach.
 Lymphnoditis, retroperitoneal.
 Cholecystitis, cholelithiasis.
 Ulcer of colon.
 Chronic interstitial fibrosis of lung.
 Fibrous obliterative pleuritis.
 Atrophy of mammary glands.
 Central softening of adrenals.
 Unequal pupils.
 Frontal endostosis.
 Subpial edema.
 Clot in longitudinal sinus.
 Chronic sulcal leptomeningitis.
 Frontal gliosis and atrophy.
 Temporal encephalomalacia (four hours post mortem).
 Cyst of softening of left internal capsule.
 Atrophy right lateral column.
 Softening in sacral region of cord.
 Dislocation of right wrist.
 Arrested development of right hand.
 Inequality in length of legs.
 Anomalous ureter.
 Anomalous blood supply of left kidney.

AUTOPSY.—*The cause of death was hemorrhagic cystitis.*

In connection with the brain findings, certain points need especial note; *endostosis of left frontal bone* near frontoparietal suture with erosion of corresponding dura mater and *maldevelopment of right forearm* (arrested probably at two to three years), with flaccid semiflexed hand and flexed fingers. The brain showed a small *white softening* (1 cm. in diameter) in the anterior portion of *left internal capsule* (no microscopic evidence of degeneration in the pyramidal tracts, examined in their passage through the bulb). *Bifrontal atrophy and sclerosis. Moderate internal hydrocephalus.* Brain weight 1195 grams. (Should weigh by Tigges' formula 1305 grams.) *Temporal lobe tissues soft.* (Microscopic examination showed marked edema changes, probably post mortem.) Unusually marked basal cerebral arteriosclerosis which microscopic examination indicates was part of a highly generalized process throughout the small vessels of the brain.

MICROSCOPIC EXAMINATION.

Nissl pictures show everywhere cellular gliosis of white matter and (marked) of plexiform layers. Generalized moderate perivascular cellular gliosis.

Considerable satellitosis, especially about large supratentorial layer cells on left side, highly marked on right side. Nerve cells much closer together on left side than on right in the superior frontal and precentral regions, not so in superior temporal gyri, conditions seem reversed in the calcarine sections. *Vessels* unusually *thickened* everywhere.

A special study with other methods would be necessary to determine whether the closely packed cells of the right pre-Rolandic sections mean aplasia or early loss (compare the maldevelopment of right arm and the endostosis of left side of cranial vault).

From the point of view of the present study, suffice it to say that there is little pigment of any kind in the Heidenhain sections except in the calcarine areas where especially the neuroglia cells are often somewhat heavily pigmented (more on left than right).

CASE 4 is a single woman who had her first mental illness at 47 and who died at 67, after 17 years hospital residence.

Her sister was insane. The patient from infancy had a paralysis of the left leg. She became a school teacher. The menopause was passed at 45 with insomnia, loss of appetite, pain in the head. She was subject to attacks of indigestion.

At 47 she came to an acute depression with recovery. At 50 she again was depressed, self-accusatory, suicidal, confused, dizzy, constipated, deaf. At times she claimed that "the dead were alive," "food was poisoned," "great estates were hers," "hands had grown to an immense size."

ANATOMICAL DIAGNOSIS.

Malformation of both legs.

Scoliosis.

Atrophy of interossei of both hands.

Contraction of palmar fascia.

Chronic fibrous pleuritis.

Pulmonary edema.

Atelectasis of left lower lobe.

Enlarged peribronchial glands.

Ascites.

Chronic adhesive peritonitis.

Acute fibrinous peritonitis.

Cholelithiasis.

Dilated common bile duct.

Hyperæmia of small intestine.

Thickened capsule of spleen.

Atrophy of uterus.

Tumor of uterus.
 Cirrhosis of liver.
 Slight atheroma of aortic intima.
 Chronic nephritis.
 Adherent dura mater.

AUTOPSY.—*The cause of death was peritonitis.*

The brain weighed 1040 grams and the thickened calvarium 365 grams. The dura is diffusely adherent to the skull but its inner surface is smooth. The vessels of the pia mater are engorged. No further description of the brain is available.

MICROSCOPIC EXAMINATION.

Little material is available in this case. *Frontal* sections show little or no *perivascular cell pigmentation*, a moderate amount in the *satellite cells* of the nerve cell layers, and proportionally rather more in the *nerve cells*, especially the larger pyramids. Moderate *subpial fibrillar gliosis*. The white matter shows little evidence of change. Considerable satellitosis, rather more marked in infrastellate layers (not fusiform) than in suprastellate, and some collections of satellites indicating total destruction of nerve cells, probably large pyramids. The second and third layers show a fairly even disappearance of nerve cells. The microscopic examination, taken in conjunction with the brain weight (1040 grams, should be 1185 grams by Tigges' formula), indicates a process akin to that of senile atrophic dementia.

CASE 5 is that of a married woman who first showed mental derangement at 42, who was brought to the hospital in three weeks and died after a month's residence.

Family history is vague and negative. At 30 her lover committed suicide; at 39 she was married. At 41 a uterine cancer was discovered; it was twice curetted; she lost 50 pounds.

Three weeks before entrance she became unusually silent and depressed, said that she did not want to be a burden, was discovered hunting for carbolic acid "which I might want to use." She was taken to a general hospital, where she was restless, out of bed, annoying other patients, immediately after a meal complaining that she had had nothing to eat. Here she showed no interest in her surroundings and was mute. Riggs' disease was found on the upper jaw; the thyroid seemed of usual size; there was no palpable sclerosis; the uterus was enlarged, fixed, its cervix rapidly breaking down.

ANATOMICAL DIAGNOSIS.

Chronic nephritis.
 Sclerosis, moderate of aorta, slight of mammaries, aortic valve.
 Fibrous myocarditis.
 Chronic ventricular endocarditis.
 Infarct of kidney.

Carcinoma of cervix uteri.
 Metastatic growth in pelvis.
 Slight acute proctitis.
 Few enlarged inguinal glands.
 Emaciation.
 Scaphoid abdomen.
 Atrophic breasts.
 Left adrenal soft.
 Bruises of scalp.
 Calvarium thickened.
 Chronic adhesive internal and external pachymeningitis.
 Slight chronic leptomeningitis.
 Patent foramen ovale.

AUTOPSY.—Cause of death was chronic nephritis.

Head.—Hair long, black, heavy. Scalp contains a large amount of fat. On inner surface of left temporal a bruise 3.5 x 4 cm.

Calvarium.—Frontal measures 4 cm., temporal 2 cm., occipital 7 cm. Scalp eburnated. No diploe.

Dura Mater.—Slightly adherent to the calvarium externally and internally along the longitudinal fissure. No marked development of the arachnoidal villi.

Pia Mater.—Thin and delicate except over the vessels and sulci. In superior portion shows slight milkiness. Slight cloudiness in fissure of Rolando and over the pons. Slight subpial edema.

Basal Vessels.—Show no sclerosis.

Pituitary.—Firm.

Sinuses.—Walled with cruor clot.

Brain.—Weight 1240 grams. Pons and cerebellum weight 140 grams. The brain is practically symmetrical. Convolutions for the most part well rounded. Slight flattening of the pre- and post-central gyri of right side; also in the left prefrontal a slight depression approximately 1 cm. in diameter. Brain everywhere firm: resilient. No ependymitis.

Cord.—Not unusual.

Middle Ears.—Left shows slight opacity.

MICROSCOPIC EXAMINATION.

No evidence of nerve cell losses, unless slight sulcal fibrillar gliosis of both superior frontal regions be taken to indicate damage to the plexiform layer. *Perivascular cell pigmentation* absent. *Neuroglia cell pigmentation* absent or slight except in both *calcarine regions*, where it is *marked*. *Nerve cell pigmentation* absent or slight (notably also, slight or absent in calcarine regions).

CASE 6 is a married woman whose first mental sickness showed at 44; came to the hospital at 45 and died at 46 after ten months residence.

Maternal cousin was insane and a patient here.

Patient was married at 26 to a quarrelsome man, who, for the last four years before her entrance, was sick. The only child of this marriage died at birth and since that time the patient has been hypochondriacal. For the last year the menses have been irregular, she has had hot and cold flashes.

At first she began to worry because she couldn't keep up the house and couldn't sleep; wished she was dead; everything seemed twisted; she suffered from headache. A month before admission she got the idea that the factory hands where she worked were going to carry her off and do something dreadful to her. Two days before admission she said that there was no God, and that she must go out in the streets naked. After a day of talkativeness she became mute for a few hours. She said to the examining physician, "Everything is wrong. There is nothing to cover me, so I have said there is no God. My head is going round."

Here the only thing remarkable physically was dorsal flexion on the right foot and no response on the left. She was restless, oriented, had difficulty in speaking, was depressed; at times confused and hypochondriacal. She became untidy and showed marked cloudings of consciousness. At times she was mute for a month; at times she repeated the same word over and over. Three months after admission there was marked tremor and she masturbated. She was given injections of goat lymph and ovarian extract without noticeable effect.

ANATOMICAL DIAGNOSIS.

Acute enterocolitis.

Lymphnoditis mesenteric and chronic.

Lymph nodes of groin enlarged.

Slight hydropericardium.

Acute nephritis.

Acute fibrinous pleuritis right.

Acute fibrinous parietal endocarditis left and (slight) right ventricle.

Fatty kidneys.

Spleen enlarged.

Cholelithiasis with obliteration of gall bladder.

Calcification of lower costal cartilages.

Arteriosclerosis, aortic, basal, arch.

Unequal pupils.

Atrophic ovaries.

Atrophic breasts.

Malformation of os uteri.

Malnutrition and anemia.

Slight chronic leptomeningitis, focal.

Atrophy of gyri, prefrontal, second and third frontal.

AUTOPSY.—The cause of death was enterocolitis.

The brain weighed 1105 grams. The vessels at the base were slightly sclerotic. The pia was slightly opaque over the posterior frontal and cen-

tral regions and proximal halves of the Sylvian fossæ, clear elsewhere. The hemispheres were equal and roughly symmetrical. The gyri of both prefrontal and second and third left frontal regions were small: the collateral sulci and the openings of the Sylvian fissure were deep and flaring. The anterior halves of both hemispheres suggest pigmentation: on the left the first temporal gyrus is lighter in color than the neighboring Broca area, but there is no difference on the right.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation everywhere even and very slight.

Neuroglia cell pigmentation moderate to slight everywhere. *Nerve cell pigmentation* little in evidence (Betz cells slightly pigmented).

No evidence of cell losses in areas studied, except that afforded by subpial gliosis (frontal, calcarine). The case deserves elaborate study from other points of view than those of this communication.

CASE 7, a married woman, who showed her first mental symptoms at about 46; came to the hospital at 59 and died about four months later.

Her mother was a senile dement. The patient was a normal child; hard working; honest. She was married at 33 and was always well until between 46 and 49, when the change of life came.

At this time she complained of being weak; thought there was something growing in her side; then grew physically weak for ten years. After this she made considerable mental and physical gains, and was able for three years to take charge of a small provision store. About a year before entrance she again became depressed and thought that she had a cancer; that her husband went with women; that people were stealing from her.

Here she showed edema under the eyes; regular weak pulse about 99; a heart not enlarged; arteries not thickened; a faint trace of albumen in the urine and many hyaline casts. She was tremulous and could not stand alone. Knee jerks and pupils were recorded as normal. She was disoriented, muttering, apprehensive, resistive, and expressed the idea that her food was poisoned. "O, I don't know much. They kept my brain and I didn't know they had changed the bed." Sometimes when touched she screamed as if in great pain; at other times pressure on the same spot brought no response. A month later irregular twitchings and muscular incoordination, sound associations, slight distractibility, memory defect for recent events, some tendency to fabricate. After a second month auditory hallucinations were evident; she was roughly oriented; feared that 72 pieces of skin would be cut from her back. At the end of a third month she was oriented and stated that her fears were imaginary, but that she could not help them. She complained of pain in her rectum and feared it might be a growth. "People think her wicked but she has never done any wrong." She was afraid of a dungeon and terrible fumes. During the last month she grew very weak, complained of pain in the left side and abdomen, and had constant hallucinations.

ANATOMICAL DIAGNOSIS.

Chronic mitral and aortic sclerosis.
 Chronic perisplenitis.
 Chronic appendicitis.
 Chronic adhesive pleuritis, left side.
 Chronic cystitis.
 Renal lithiasis.
 Slight arteriosclerosis.
 Malnutrition.
 Myomata of uterus.
 Congestion of diplœ.
 Chronic pachymeningitis externa.
 Slight subpial edema.

AUTOPSY.—*Cause of death was hypostatic pneumonia.*

The diplœ was congested in patches in frontal and parietal bones. The pia over hemispheres and base was slightly edematous, clear and delicate. The basal vessels and their branches were free of gross changes, not conspicuous on section. The consistency of the brain substance was a little diminished; the convolutions rather plump.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation in general heavy (in this case some comparisons were made with spinal cord pigmentation: little or no perivascular cell pigmentation was found in several levels examined), perhaps slightly less in some areas of the right side.

Neuroglia cell pigmentation heavy in most areas, perhaps more marked in left side sections.

Nerve cell pigmentation more variable in amount than what the other cell types show. Also in certain areas *some* of the *cells* are much more *heavily pigmented* than others. In general more on the left side.

Nissl pictures show many small *vessels thickened*, considerable *subpial gliosis*, and an increase of neuroglia cell nuclei within the cortical layers of the frontal sections (but these are apparently developed along capillaries rather than next to nerve cells). Little or no satellitosis about nerve cells. In the paracentral regions there are considerable stretches in which both suprastellate and infrastellate large pyramids are absent; but there is no evidence of satellitosis about the surviving cells. The precentral gyrus, left, shows numerous areas of focal atrophy, involving suprastellate layers, but leaving the first and second cortical layers. The remnant of nerve cells in these areas of devastation indicate that the process of destruction is a simple atrophy; there is never any evidence of satellitosis attending this atrophy.

CASE 8 is a single woman whose first mental illness came on after the grippe and pneumonia, at about 49. She died after twelve years almshouse and hospital residence.

She had worked as cook; was cheerful; had good habits. Family history is unknown.

After her illness at 49, probably during the menopause, she became apprehensive, and soon developed auditory and visual hallucinations. Physical examination on her admission here showed a heart murmur and poor resonance over the right lung. She described her hallucinations quietly and intelligently. Later more emotional, she thought she was about to be killed. In three years she had gained much strength, and got into the habit of spending most of her time on a bench, scolding anyone who interfered with her. She was excitable, usually singing and noisy. After considerable improvement she was discharged to the almshouse at 54, and again returned to this hospital at 57, when she had a severe cystitis. At this time she was quiet when let alone, irritable when spoken to; disoriented, and said "I don't know" to everything. After several months in bed she developed erysipelas.

ANATOMICAL DIAGNOSIS.

Acute conjunctivitis.

Induration of skin of nose.

Acute hepatitis.

Acute parenchymatous nephritis.

Bronchopneumonia.

Epicarditis, acute.

Acute splenitis.

Myocarditis.

Chronic perisplenitis.

Chronic obliterative pleuritis,

Chronic interstitial nephritis.

Atheroma of aorta.

Valvular endocarditis, chronic.

Thrombosis of left ventricle.

Cavitation of apex of left lung.

Myoma uteri.

Unequal pupils.

Opacity of lens.

Chronic adhesive pachymeningitis.

Chronic leptomeningitis.

General cerebrospinal encephalomalacia.

AUTOPSY.—Cause of death was erysipelas.

Brain.—Hair, heavy grey. Scalp is unusually thick and contains much fat. Over the scalp about the roots of the hair are diffusely reddened areas, Temporal muscles are very small.

Calvarium.—Thin

Dura.—Fairly adherent to calvarium and the entire cranial wall. Is not adherent to pia. Pial vessels are deeply injected even to the finer branches.

Pia.—Is slightly milky along sulci. Pacchionian granulations along the longitudinal fissure. Pia is not adherent to the brain substance. Basal

vessels not remarkable. Brain weight 1085 grams. Brain is everywhere softened, especially at tips of frontal and the temporal lobes. There is a gaping of sulci in the parieto-occipital region of both hemispheres. Cerebellum and pons: weight 160 grams. The cerebellum appears softer than the cerebrum. No lesions noted. The pituitary body is softened and friable. Perforation of both ear drums.

Cord.—The pia is injected and cord unusually soft.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation moderate everywhere.

Neuroglia cell pigmentation moderate to marked everywhere.

Nerve cell pigmentation moderate everywhere. The left side sections seem to show on the whole less pigment, especially the left calcarine.

Nissl pictures exhibit marked focal vascular lesions among which figure dilatations resembling those of *miliary aneurysms*, but there are no instances of hemorrhage and but few instances of focal glia reaction about the dilatations. There is, however, everywhere a heavy neuroglia reaction which is rather even in amount in the white matter but is on the contrary focally very variable in the plexiform layer. The *left precentral gyrus* shows good examples of focal destructive lesions of a suprabellate distribution, as if excavated under a comparatively well-preserved second cortex layer. Numerous other focal lesions and devastations. The veins of the cortex and the spinal cord are often packed with polynuclear leucocytes (erysipelas). Lime deposits in hippocampal gyri and in spinal cord (no sign of pyramidal tract sclerosis).

This case teaches how occasionally the gross appearances are surprisingly deceitful. The subject gave no coarse sign of arteriosclerosis or other vascular disease except plaques on the posterior aortic wall and aortic, mitral and pulmonic endocarditis. Yet hardly any cortex section is without evidence of vascular disease.

CASE 9 is a married woman, first insane at 46, who died six months later, after four months hospital residence.

Her father was insane. She had one child before her marriage at 34, four afterwards. She is now at the menopause.

Two months ago she became worried because she had married a divorced man and wanted to leave her husband. She became sleepless and apprehensive, depressed, self-accusatory. On admission here her knee-jerks were slightly exaggerated, the right more than the left; pulse 60, regular and weak. She complained of feeling weak and unable to eat; thought the doctor was going to shoot her, and that her children were to have their hearts cut out. After three weeks she failed rapidly; got so weak she could hardly talk; said that her stomach was full, she could hold nothing in it; was tube fed.

ANATOMICAL DIAGNOSIS.

Pneumothorax.

Hydropericardium.

Purulent otitis media right side (tuberculous).

Passive congestion of liver.

Mesenteric lymphnoditis.

Emaciation.

Atheroma of aorta, slight.

Granular ependymitis.

Brain weight 1260.

Constriction of stomach (6 cm. from pylorus, hour glass).

AUTOPSY.—*Cause of death was pulmonary tuberculosis.*

Brain weight 1260 grams. Calvarium shows a slight mottling of diploe. Dura and venous sinuses not notable. Pia clear and delicate over the hemispheres with delicate tracery of injected vessels. Basal vessels and cranial nerves not notable. Consistency of brain somewhat diminished. Convolutions full and with smooth surfaces. The ependyma covering the caudate nuclei and about the foramen of Munro is finely granular. Section of hemisphere shows rather conspicuous small vessels of cortex. Ependyma of fourth ventricle finely granular.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation slight except moderate in frontal section.

Neuroglia cell pigmentation marked, except gyri recti.

Nerve cell pigmentation slight.

Nissl pictures show nerve cells fairly intact, with occasional moderate losses in supratentorial layers.

CASE 10, a married woman, began to worry at 50 and died at 52, after residence in the hospital first for two months, and then for a year.

Of good family history, ambitious, a hard worker, she made an unfortunate marriage at 23. She had three children; she passed the menopause 49.

At 50, when her husband refused to work and planned to sell her home, she became sleepless, easily tired, unable to concentrate on her work, doubtful of her ability to do things. She took an overdose of laudanum. On entrance here the radial was sclerotic, the ankles edematous, while the urine showed albumen and casts. She had headache; was clear, oriented, inactive. After two months she made some improvement and was allowed to go home. Ten months later she was again admitted, inaccessible, irritable, with nothing suggesting hallucinations, and a frequent complaint of a queer feeling in her abdomen. At this time physically she showed an enlarged heart, a soft radial, blood pressure 105, a negative urine. During the last month of her life she was very weak and at times delirious.

ANATOMICAL DIAGNOSIS.

Very slight arteriosclerosis of internal mammaries, coronaries.
Thickening of aortic and mitral valves.
Chronic endocarditis.
Fibrous myocarditis.
Chronic parenchymatous nephritis.
Chronic passive congestion of liver.
Caseous nodule of right lung.
Apical scars of both lungs.
Chronic bronchitis.
Chronic obliterative bronchitis.
Lymphnoditis, superficial, mesenteric, retroperitoneal.
Injection of ileum.
Omental adhesions.
Fibroid of uterus and endometritis.
Sclerotic ovaries.
Slight chronic lepto- and pachymeningitis.
Slight asymmetry of brain.
Unequal pupils; cataract of right eye.
Poorly nourished.
Decubitus elbows; sacrum; acromion, right and left.
Muscles pale.
Bone marrow pale.
Scar of right thigh.

AUTOPSY.—*Cause of death doubtful.*

The brain weighed 1155 grams. Generally of about normal consistency, the right angular gyrus was the softest portion. The convolutions were well rounded. The right hemisphere was 1 cm. shorter than the left.

MICROSCOPIC EXAMINATION.

Little or no pigment except in the neuroglia cells of the calcarine cortex. No evidence of cell losses.

CASE 11 is a single woman whose first mental trouble came on at 44. She died at 48 after three years' residence in this hospital.

A second cousin is insane. The patient has been a cheerful woman of ordinary mental capacity and able to support herself. In the late thirties her menses became irregular, and in June of her 44th year they ceased altogether.

At the latter date came insomnia, self-accusation, hallucinations, visual and auditory; after ten months without improvement she was brought to this hospital. Physical examination on admission showed impaired resonance of lungs, an increase in knee-jerks and a slight ankle clonus of left foot, and tremor of hands and face. She was oriented, restless, apprehensive. She said, "I have abused myself," "I am paralyzed," "The clock is fixed to take care of my brains and that means I am not to get well,"

"Everything seems queer and far off and dull," "I know these things are not so but I can't help thinking of them." One instance is recorded of opisthotonus following a "pain in the head." In about three months came a change to a silly, violent mood, compulsive ideas. "I am not able to make people understand how good I have been." "Keeping in trouble all the time is the only way to make things straight." This mood continued, with good orientation and memory, to her death at 48, from swallowing a cloth.

ANATOMICAL DIAGNOSIS.

Hemorrhage, congestion and edema of lungs.

Acute congestion of spleen and kidney.

Chronic perisplenitis.

Cyst of left parovarium.

(Vascular system apparently normal.)

AUTOPSY.—*Cause of death was asphyxia.*

The brain weighed 1310 grams and beyond a general edema was not noticeable in the gross. The pia was clear. The basal arteries were free from gross changes.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation somewhat more variable than usual (much in right frontal region).

Neuroglia cell pigmentation variable (more in right frontal, left precentral, about the same amount in both calcarines).

Nerve cell pigmentation marked in frontals and calcarines, little in precentrals (but marked variation from cell to cell).

Nissl pictures suggest, but do not clearly show, moderate cell losses in supratentorial region (layers of medium-sized and larger external pyramids).

CASE 12, a widow, came to this hospital at 47 for two attacks of mental trouble, and then returned at 65 to remain for ten years.

Her mother died of asthma; an aunt was insane. The patient was a cheerful woman.

At 47, in the menopause, she complained of pain in the top of her head, was depressed and self-accusatory, improved; six months later grew worse, thought the family were going to be burnt, had auditory and visual hallucinations. She was very feeble. Improving again she was allowed to go home, where for eighteen years she "had spells of thinking herself on fire and wanting to jump out of the window." On returning to this hospital at 65 she was well nourished; her knee-jerks slightly increased. For the first few weeks oriented, quiet, silly, rambling in her talk, she became confused, noisy, hallucinated, doing things on impulse. A three months' period of complaints about having heart disease followed; then three months when she was quiet, well behaved, industrious. In the three following summers she had mild manic attacks, with intervals of clearness and quiet. Six

years after entrance she failed rapidly after much digestive disturbance. Memory defect for recent events appeared. In the seventh year came a manic attack; in the ninth she withstood an attack of lobar pneumonia, but two months after complained of dizziness. In the tenth year her pupils were small and did not react to light or accommodation; she showed good insight, memory, judgment to the time of her death from a sudden attack of edema.

ANATOMICAL DIAGNOSIS.

Edema ankles, eyelids, ascites.
Abscess of kidney.
Chronic nephritis.
Milk patch.
Vegetative endocarditis.
Basal sclerosis.
Chronic sclerosis.
Chronic peritonitis.
Chronic perisplenitis and perihepatitis.
Mesenteric lymphnoditis.
Sago spleen.
Apical scar.
Bronchial lymphnoditis.
Chronic fibrous pleuritis.
Chronic pachymeningitis.
Chronic leptomeningitis.
Dural tumor (small).
Bone marrow pale.

AUTOPSY.—*Cause of death was acute nephritis.*

The brain weighed 1310 grams. The dura was generally thickened and over the occipital region in the medium line presented a tumor 1 cm. in diameter. The pia was injected and slightly cloudy. The basal vessels showed areas of sclerosis. Convolutions, well rounded, showed shallow depressions in the supraparietal regions.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation moderate and even throughout.
Neuroglia cell pigmentation marked, and especially marked in precentrals.
Nerve cell pigmentation moderate, but perhaps somewhat more in left precentral than elsewhere. No certain evidence of cell losses in areas so far examined.

CASE 13 is that of a married woman who first became insane at 43 and who died at 68 after a hospital residence (very much interrupted) of about ten years.

Her uncle was insane; her sister and a son died of tuberculosis. She is described as cheerful.

At 43, after a long siege of nursing, she began to complain of headache, said she was Jupiter, under the control of her son's spirit, possessed of unbounded wealth. Noisy, incoherent, elated, fantastic, when she came to the hospital, she recovered in twenty-four days. Six months later she came to the hospital in another attack—this was like the first except that hallucinations of sight and hearing were noticed. She came in for six more attacks before she was 50; in the intervals she was progressively more demented and indecent. At 63 she was admitted for the last time, with a temperature of 101, an enlarged heart, a systolic murmur; her knee-jerks lively. She was clear and dressed in bright colors. "I am not a common insane patient." She stuttered and slurred in her loose, stereotyped talk. Six months before her death the urine showed red cells and albumen; at this time she began to vomit and from then on symptoms of gastro-intestinal origin were prominent. She was well oriented to within a few days of her death.

ANATOMICAL DIAGNOSIS.

Edema of left ankle.
 Jaundiced skin.
 Purulent bronchitis.
 Acute cystitis.
 Chronic periappendicitis.
 Chronic peri-oophoritis.
 Splanchnoptosis.
 Chronic fibrous pleuritis.
 Chronic fibrous epicarditis.
 Sclerosis of coronaries, basal, aorta.
 Chronic interstitial nephritis.
 Atrophy of spleen.
 Infarction of lung.
 Purulent otitis media.
 Purulent mastoiditis.
 Unequal pupils.
 Pigmentation of trunk.
 Emaciation.
 Calvarium dense.
 Chronic fibrous pachymeningitis.
 Chronic fibrous leptomeningitis.
 Injection of pia mater.
 Subpial edema.
 General cerebral atrophy.

AUTOPSY.—Cause of death was carcinoma of stomach and pancreas.

Calvarium.—Frontal measures 0.6 cm., temporal 0.4 cm., occipital 0.9 cm. Is smooth, eburnated externally, internally wrought with deep grooves for the meningeal vessels. Orbital surfaces rough and prominent. The markings in the middle cranial fossa are prominent, amounting almost to exostoses. Diploe present.

Dura Mater.—Slightly thickened everywhere. Adherent in the post cranial fossa. Sinuses negative. Pacchionian bodies medium sized.

Pia Mater.—Bound to dura by a few adhesions at the frontal and temporal poles, is slightly thickened in the Sylvian region and over the inferior surface of the cerebellum and post cisterna. Pial vessels injected over the whole convexity. There is a marked subpial edema in all parts of the convexity (hydrops ex vacuo).

Brain.—Weight 1105 grams. The convolutions are atrophied in the frontal, central, parietal and occipital regions. The consistency in all parts is decreased, with more marked decrease in the parietal region than elsewhere. No granules in the ependyma of fourth ventricle or lateral ventricles.

Basal Vessels.—Show scattered areas of thickening in the different branches, but nowhere marked except in the carotids, which are diffusely thickened, but not calcified. The smaller cortical vessels are not thickened. Artery to the right corpus striatum shows a small atheromatous patch.

Pons and Cerebellum.—Weight 140 grams. Cerebellum everywhere softened. Pons decreased in consistency. Medulla normal.

MICROSCOPIC EXAMINATION.

The *pigmentation* of all cell types in the chosen regions is everywhere remarkably slight.

CASE 14 is that of a single woman whose insanity began at 45, who was brought to this hospital at 56 and died in ten days.

Always peculiar and seclusive, after the menopause at 45 came recurring episodes of delusions of persecution, followed by nearly normal intervals. In the attack for which she was brought here she claimed that everything had a bad odor, at one time fell to the floor, trembled, frothed at the mouth. Here exophthalmos, pulse 124; allowed needle to be stuck into eye and tongue without affect. She was mute, resistive, tube-fed.

ANATOMICAL DIAGNOSIS.

Edema and congestion of lungs.
 Chronic diffuse nephritis.
 Fatty myocarditis.
 Valvular sclerosis.
 Edema of lower legs.
 Chronic localized peritonitis.
 Chronic caseous lesions of spleen.
 Pigmentation and fatty change of liver.
 Scars of right apex.
 Basal, coronary, valvular, sclerosis.
 Encephalomalacia sixteen hours.
 Chronic fibrous leptomeningitis, Rolandic.

AUTOPSY.—Cause of death was bronchopneumonia.

The brain weighed 1245 grams. The occipital poles and temporal regions were slightly softer than the remainder of the brain. The pia was moderately injected and was opaque over both Rolandic regions. The vessels at the base showed a few patches of sclerosis which were not present in the primary or distal branches.

Nissl pictures show the left superior frontal gyrus poorer than right in nerve cells, and the left precentral poorer than the right, with foci of subpial gliosis. In the superior temporal gyri the stellate cell layer of the left side is not so rich in cells as that of the right side. Hippocampal gyri: The left side section shows a focus of nerve cell poverty in the giant cell layer of the fascia dentata; the ependyma shows a general thickening without small breaks and in places is normal for long distances; there is a suggestion of focal cellular gliosis in the polymorphous cell layer. In general many axonal reactions are demonstrable in the frontal (large external pyramids) and precentral (Betz cells) regions. There is, however, some evidence of a greater long standing atrophy and gliosis of the anterior regions.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation everywhere moderate to marked.

Neuroglia cell pigmentation marked as a rule.

Nerve cell pigmentation chiefly in layers of medium size and large external pyramids. The precentral areas show occasional Betz cells highly pigmented, others not at all.

CASE 15 is that of a single woman of 48, whose mental trouble apparently began a few years before admission. She died after twenty-five days' residence.

At 44 she began to have fits, she slept in the day and was awake most of the night; her weight was 250. A dementing process followed. On admission here she was weak, drowsy, stupid, deaf, partly oriented, her memory poor for recent but fair for past events. In two weeks she showed more interest, complained of being lonesome. At any time a rational answer to a simple question could be obtained if the questioner could break through her drowsiness. She had considerable insight. Her voice was rough and expressionless. Physically the picture was that of myxedema: wide nose, thick, everted lips, large tongue, stubby extremities, edematous appearing skin with no pitting, loss of hair. There was a systolic murmur, weak thready pulse, many syncopal attacks. A few days before her death appeared symptoms of an acute infection of the urinary tract.

ANATOMICAL DIAGNOSIS.

Pulmonary edema.

Internal hemorrhagic pachymeningitis, right convexity.

Recent hemorrhages, subdural space.

Atheroma of aorta.

Fatty infiltration of heart muscle.
 Chronic fibrous endocarditis.
 Chronic fibrous pleuritis.
 Hyperemia of spleen.
 Fatty degeneration of liver.
 Hyperplasia of thyroid.
 Myxedematous hypertrophy of skin.
 Panniculus dry, pale.
 Hypertrophy of calvarium.
 Cerebral atrophy, chiefly frontal.

AUTOPSY.—The cause of death was kidney abscess.

The calvarium weighed 450 grams. Between dura and pia was a thickened hemorrhagic membrane extending over the right hemisphere and depressing the cortex anterior to the Rolandic fissure. The cortex here had a necrotic appearance. At the base of the middle fossa was a small area of hemorrhage. The pia was notably thickened along the cranial nerves and vessels, very slightly thickened over the convexity; it was quite generally adherent to the cortex and could only be removed in small pieces; it was not especially cloudy; over the left hemisphere it was edematous. The basal blood vessels showed no notable changes. The convolutions in frontal and parietal regions were slightly atrophied; the surfaces of many of the frontal ones showed fine depressions and lines of contraction.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation slight to considerable.

Neuroglia cell pigmentation slight, except fusiform layer of left calcarine and lower layers of right calcarine areas.

Nerve cell pigmentation slight except precentrals, which vary, some cells negative, others supplied with an excess.

Nissl pictures.—Progressive changes in glia cells of all regions; increase of glia in superficial layer and in white substance; nerve cells in parietal region shrunken and in pyknomorphous condition; no active degenerative processes; leucocyte accumulation in many of the smaller arteries; hyaline degeneration of cerebral capillaries in all regions.

CASE 16 is that of a man whose first mental symptoms appeared at 47, who came to this hospital three years later and died after one month's residence.

His father was probably a suicide. He himself had been a steady worker, a moderate drinker; he had had inflammatory rheumatism, probably gonorrheal, at 24 and 27. From 35 to 47 he had many morning headaches; at the latter age he gave up drinking.

At 47 he became restless, sleepless, refused to see anyone, refused to eat, complained of a pressure in his head and a shaking in his bowels; later he developed hallucinations of sight. He thought that he was dead and the cause of all people's deaths. At 50 he improved considerably and went to

work for three months; then became over-talkative, claimed to have found a new tinning process, was boastful and elated. On entrance there was albuminuria. He showed flight of ideas, elation, hallucinations of hearing, perfect orientation. Three weeks after admission he was taken sick with dysentery and died five days later.

ANATOMICAL DIAGNOSIS.

Acute ulcerative colitis.

Lymphnoditis mesenteric, retroperitoneal, bronchial.

Thickened mesentery.

Fatty liver.

Chronic interstitial nephritis.

Bronchopneumonia.

Ventricular endocarditis.

Coronary and slight basal sclerosis.

Chronic fatty myocarditis.

Slight hypertrophy of heart.

Chronic perisplenitis.

Hypertrophy of prostate.

Emaciation.

Slight internal hemorrhagic pachymeningitis.

Slight leptomeningitis.

Encephalomalacia of temporal lobes (7.5 hours post mortem).

Perforation of left ear drum.

AUTOPSY.—*The cause of death was dysentery.*

The brain weight was 1450 grams. The dura was not adherent to the calvarium but to the pia over the vertex and along the longitudinal fissure. The pia, over the central and superior parietal gyri, was reddened; it was thickened over the sulcal vessels; it stripped readily from the cortex. The convolutions were well rounded except for the superior parietal gyri, which were small and depressed below the surface level. Brain substance firm, the temporal lobes a trifle softer than the rest. Ventricles are smooth; the choroid plexus slightly cystic. The frontal region on section retracts from the knife and the gray matter over the crowns of the gyri is china-white. The white matter shows many small bleeding spots.

MICROSCOPIC EXAMINATION.

Satellitosis is a fairly marked feature in a few areas of cell losses. *The perivascular cell pigmentation* is almost wanting. *Neuroglia and nerve cells* show it in slight degree.

CASE 17 is that of a man whose insanity came on at 45 and who died in this hospital after seven months residence.

His father died of apoplexy at 58, and father's brother had epilepsy. Otherwise family history is negative. Patient himself was a good worker,

earning \$1200.00 a year; of a nervous; conscientious sort. He admitted having clap, but denied syphilis.

A year before entrance he became tired and unable to sleep; gave up his work; said that he was sick and not good for anything. For a month before entrance ideas of self-reproach occupied his mind. "Am not even good enough to kill myself." On admission here his arteries were fairly palpable; heart seemed normal in size; soft systolic murmur; pulse of high tension; visible radial pulsation; urine showed a slight amount of albumin; epithelial and hyaline casts. His hands showed a slight tremor; his kneejerks were very much exaggerated. He was clear, agitated, sleepless, despairing. A week after admission his temperature was 101. He said, "I am unable to talk. Everything is blank to me. I have no memory; no friends; my bowels do not act." In a few weeks he manifested delusions of somatic character. A month before his death he said, "I haven't a home or a wife; how could I support a wife?" After falling to the floor he remained in a dazed, apathetic, stuporous condition for a few days; developed paralysis on the left; died.

ANATOMICAL DIAGNOSIS.

Cerebral hæmorrhage—right lateral ventricle.

Hæmorrhage beneath scalp.

Arteriosclerosis of internal mammary, iliac, basal, coronary arteries and aorta.

Chronic epicarditis.

Thickened aortic valve.

Endocarditis.

Hypertrophy of heart.

Acute pleuritis.

Bronchopneumonia.

Acute bronchitis.

Ulcer of neck.

Emaciation.

Calvarium eburnated.

Slight chronic pachymeningitis.

Cyst of pituitary.

Slight subpial edema.

AUTOPSY.—*The cause of death was cerebral hemorrhage.*

The brain weighed 1395 grams. There was a marked flattening of the convolutions over the parietal portion of the right hemisphere, and this area showed a lessened consistency.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation in general slight, except precentrals, where it is marked.

Neuroglia cell pigmentation everywhere considerable, but very well marked in precentrals and calcarines.

Nerve cell pigmentation in general slight, except precentrals.

CASE 18, a married man, had a first attack at 43 and died at 46, after a three years' interrupted residence at this hospital.

A sister of the patient had chorea when young; another sister is very nervous.

The patient himself was a very steady worker; at 42 he was working night and day. He complained of several attacks of blindness of short duration, of nausea, of sciatic rheumatism. At one time he left the house and said that he was going to cut his throat; he would grasp violently at his throat; he tried to strangle his wife and then asked forgiveness. A local physician found something wrong with the kidneys after the patient had complained about them. He tried to work, but couldn't. He saw knives and razors lying about the bed and had an uncontrollable desire to handle them. On entrance he showed a large heart, albumen in the urine, a fine tremor; he complained of a gagging sensation in his stomach immediately after eating, insomnia, weakness, buzzing in the head. He asked to be restrained so that he could not hurt anyone. After two months he felt better and went home. After three months he returned, fearing that he might harm someone, complaining of peculiar dull aches in his head with intervals of feelings of "head emptiness," giving a history of dizziness and (doubtful) auditory hallucinations. Here he showed ataxia, exaggerated knee-jerks, pupils reacting rather sluggishly to light and well to accommodation. Within a month he developed slurring articulation and auditory hallucinations; he misplaced words in test phrases, grimaced before the mirror; wanted "remedies for his brain." In September he made a good recovery from dysentery. In October, with many symptoms of tuberculosis of the lungs, he became more cheerful. In December after a bad attack of psoriasis he was still better mentally; his urine contained, as always, a few hyaline casts. In February came pains in his left leg, which became swollen to the thigh. At this time the notes say, "Patient constantly has hypochondriacal attacks, demanding medicine." On March 1 his temperature was 102, on March 4, 104. Throat culture for the K-L bacillus was positive. He was confused; had ataxia and tremor; died.

ANATOMICAL DIAGNOSIS.

Cerebral hæmorrhage.

Bloody discharge from nose.

Acute tracheitis and bronchitis.

Acute nephritis.

Acute splenitis.

Puriform thrombus of right transverse sinus.

Hæmorrhagic ganglionitis.

Softening of pituitary.

Cyst of the cerebellum.

Cortical destruction, occipital and temporal left.

Acute leptomenigitis.

Hæmorrhagic ileitis.

Tuberculosis right lung.
 Scar at apex left lung.
 Thrombus left popliteal vein.
 Edema left foot.
 Exudative pharyngitis and tonsillitis.
 Hydropericardium.
 Tricuspid and ventricular endocarditis.
 Chronic fibrous myocarditis.
 Hypertrophy of heart.
 Hematoma of eighth rib.
 Constriction of œsophagus.
 Eversion of tip of ensiform.
 Moderate splachnoptosis.
 Chronic perisplenitis and perihepatitis.
 Chronic fibrous pleuritis.
 Mesenteric lymphnoditis, pancreatic group.
 Unequal pupils.
 Hypertrophy of prostate.
 Calvarium thin.
 Chronic adhesive external pachymeningitis.
 General cerebral gliosis.
 Sclerosis of occipital veins, left.
 Arteriosclerosis of posterior basal vessels; and left superior cerebellar arteries.

AUTOPSY.—The cause of death was cerebral hemorrhage.

The brain weighed 1475 grams. The dura was slightly thickened and very adherent to the skull. The meningeal branches of the occipital veins are visibly hyperdistended and on the left side notably thickened. The basal vessels are thin and delicate. The hemispheres are equal and the consistency increased. Over the inferior surface of the left occipital and posterior temporal lobes occurs a diffuse hemorrhage which destroys the cortex and extends into the gray matter for 2 or 3 cm. On the right side in the same area injection surrounds the distribution of the posterior cerebral artery. There is a cerebellar area of softening 2 cm. in diameter. The left superior cerebellar artery is thickened and of unusual size. The Gasserian ganglions are hemorrhagic. The pituitary was soft with a minute area of softening in the center.

Microscopic examination of the small amount of material available shows *nerve cell pigmentation* exceeding that of *neuroglia cells*, while the *perivascular cell pigmentation* is negligible.

CASE 19 is a man whose insanity began at 49 and whose death occurred five months later after less than three months' hospital residence.

The father was eccentric, and there were instances of insanity on the paternal side.

After considerable loss of money mental symptoms appeared in the following order: Worry, insomnia, restlessness, depression, delusions, possibly

visual hallucinations, agitation, ideas of negation and stuporous condition preceding death. Orientation was fairly well preserved till the last few days. Physical examination showed cardiac hypertrophy and arteriosclerosis. (A full report of this case in J. of N. and M. D., 1908, 300.)

ANATOMICAL DIAGNOSIS.

Hypostatic pneumonia.

Hydropericardium.

Cardiac hypertrophy.

Atheroma of aorta; slight in basal vessels.

Mitral sclerosis.

Chronic localized fibrous peritonitis.

Slight fatty degeneration of liver.

Edema of pia mater.

Chronic sulcal and sylvian leptomenigitis.

AUTOPSY.—*The cause of death was pneumonia.*

The brain weighed 1445 grams. The pia contained considerable fluid and was milky over the vessels. The large blood vessels at the base showed some yellow atheromatous patches of irregular distribution; the lumina of the arteries was not diminished. The choroid plexuses showed a few minute cysts. There were no focal areas of softening in the brain.

MICROSCOPIC EXAMINATION.

From the fuller account of Southard and Mitchell, the following may be taken for the purpose of the present correlation:

Perivascular cell pigmentation everywhere marked.

Neuroglia cell pigmentation tends to affect the intermediate layers of the cortex.

Nerve cell pigmentation of the larger elements (Betz, solitary cells of Meynert) apt to be present, but present in the smaller elements, notably in the larger external pyramids of the frontal regions.

Nissl preparations showed an essentially normal layering.

CASE 20 is that of a single man, a shoe-worker, who began to worry at 41, came to the hospital at 45 and died fifteen months later.

A bright, steady man, he took no medicine and was never sick until he failed in business.

At this time he began to worry and felt so badly that he went to the almshouse. For the next four years he did not improve, and before his admission to the hospital he expressed ideas of persecution and reference. Here he writhed and groaned throughout the physical examination; his extremities were blue, his movements feeble and groping; his knee-jerks greatly increased. In a few days he began to sit in one place, crooning, showing many stereotyped mannerisms, paying no attention to his surroundings. During his stay in the hospital he uttered words only once and then, a month before his death, asked an unimportant question.

ANATOMICAL DIAGNOSIS.

Pulmonary tuberculosis.
Bronchopneumonia.
Congested diploe.
Slight adhesive pleuritis.
Emaciation.
Decubitus.
(Liver weight 880 grams.)
(Arterial system seems normal.)

AUTOPSY.—*Cause of death was pulmonary tuberculosis.*

The calvarium weighed 410 grams, the brain 1400, each hemisphere 555 grams, and the brain stem 280. The pia was clear and delicate, the basal vessels free of gross changes. The cerebral substance was of soft consistency (8½ hours post mortem).

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation marked everywhere, but less marked than *neuroglia cell pigmentation*. Nerve cell pigmentation more varied than either; especially the *left precentral gyrus* shows some larger elements loaded with large granules, others practically without pigment.

CASE 21 is a man who had his first manic attack at 44 or 47, going to a Connecticut hospital for six months, then coming here. He was violent; "could perform miracles." In five months he recovered and went home. At 62 he was again admitted, after four months of irritability, talkativeness, headache and at times confusion. For the next eight years he was euphoric—a chronic manic case.

AUTOPSY.—*The cause of death was dysentery.*

The brain weighed 1360 grams. The pia was thin; the convolutions full, showing no atrophies. The ventricles were smooth. The larger cerebral vessels showed no changes.

ANATOMICAL DIAGNOSIS.

Ileocolitis.
Ulcers of ileum and colon.
Slight sclerosis of coronary arteries.
Chronic apical pleuritis.
Chronic perihepatitis.
Cholelithiasis.
Chronic cholecystitis.
Hæmatoma of right ear.
Chronic pachymeningitis.
Chronic fibrous endocarditis.
Gaping sulci (precentral).

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation everywhere marked and almost uniform.

Neuroglia cell pigmentation marked or excessive.

Nerve cell pigmentation considerable to excessive (excessive in Betz cells, precentral).

Nissl pictures show subpial gliosis general and a suggestion of supratentorial pyramidal cell losses (frontal).

CASE 22 is a divorced man in whom mental symptoms first appeared at 41, who entered Worcester hospital at that time and this hospital at 46, dying nine months later. (The age at death may have been 51, which would carry the onset forward to 45.)

His father was alcoholic and died insane; his mother was nervous; a sister is insane. The patient was a bright boy, never strong; he married at 27, had two children, was divorced because of his alcoholic habits. At 38 he was very irritable.

At 41 he talked to himself; lost his way in a familiar city. At the hospital he admitted auditory hallucinations, a strange feeling in the back of his head: later became voluble, over-active, said that people were following and talking about him. After ten months he seemed normal and was discharged. He supported himself as a cook. At 46 he began "to ramble about religion; he said that every time he mentioned the name of God he was stricken blind and could not open his eyes until inspired by a good thought. Here he never was known to answer a question directly. He would stop his walking and close his eyes queerly, or blink them, when asked for explanation." "You shouldn't ask a crazy man, he isn't supposed to know." "I lost my eyesight completely." Other replies—"They say I live in Lynn." "They say my father's name was Thomas Jefferson, but I can't help that." "Insane never keep track of the days, a thousand years in my sight is but a day." Always giving the impression of a strange exhilaration, probably well oriented, punning, rhyming, working well, often pacing the hall with peculiar swings and steps, he was five feet six inches in height, abnormally, weight 300. Four months after admission came an attack of jaundice which cleared in another month. In thirty-four days it reappeared, with tenderness over the gall-bladder, vomiting, collapse, dyspnea, death.

AUTOPSY.—*The cause of death was acute cholecystitis.*

The brain weighed 1320 grams. It was firm; the convolutions well rounded.

ANATOMICAL DIAGNOSIS.

Abscesses of liver.

Acute cholecystitis.

Cholelithiasis.

Perforation of gall-bladder.

Acute peritonitis.

Jaundice.

Fatty infiltration and degeneration of pancreas.

Fatty liver (4940 grams).

Cirrhosis of spleen (640 grams).

Cirrhosis of kidney and pancreas.

Chronic nephritis.

Chronic aortic and pulmonary endocarditis.

Anthraxis of bronchial lymphnodes.

Lipoma of back.

Obese.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation in general slight (considerable right superior frontal).

Neuroglia cell pigmentation considerable except precentrals and left frontal.

Nerve cell pigmentation marked in larger external pyramids of precentrals, elsewhere less (slight, calcarines).

CASE 23 is a married man⁶ who first became insane at 45, came to this hospital at 57 and died five months later.

A laborer of an ordinary sort. An uncle and a distant cousin were insane.

At 45 he began to think that fellow employees were mesmerizing him; he refused his pay because it had poison on it; voices told him to kill someone. At 56 he was still suspicious and very restless; there were two occasions when he had "sinking spells" for two or three weeks. On entrance he showed a dry skin, acne, pulse of poor volume, albuminuria, tremor, weakness, pupils slightly irregular and reacting poorly to light and accommodation; varicocele. Peripheral sclerosis was not marked; there was no speech defect. He was disoriented, irritable, slightly euphoric. He showed poor memory and some fabrication. In twelve days he became stuporous, paid no attention to pin pricks, had a temperature of 102; showed a tendency to cerea. Ten days later, still in bed, he said that God gave him the power to speak; "something comes over me and I can't talk—it's mesmerism." He complained of pain in head and arm, hallucinations. In another month he became weak and mute. He showed the signs of a pneumothorax.

AUTOPSY.—*The cause of death was bronchopneumonia.*

The pia, slightly opaque along the vessels, is considerably distended with clear fluid. The surface of the brain shows slight narrowing associated with very slight puckering of the frontal convolutions.

Localized bronchopneumonia with abscess formation.

Atelectasis of right lung.

Emaciation.

Slight generally distributed arteriosclerosis.

Chronic fibrous pleuritis.

Old scar of left lung.
Tricuspid insufficiency (relative).
Chronic diffuse nephritis.
Slight pachymeningitis.

MICROSCOPIC EXAMINATION.

From L. B. Alford's description and a re-examination from the point of view of the present correlation, the following may be stated:

Perivascular cell pigmentation moderate.

Neuroglia cell pigmentation everywhere uniform and moderate.

Nerve cell pigmentation moderate and somewhat variable (*e. g.*, some large external pyramids of precentral regions show no pigment, others much).

Nissl pictures show occasional nerve cells markedly affected by satellitosis, but most nerve cells are intact. Frontal gliosis (white matter).

CASE 24 is that of a man who began to act queerly at 46, who came to the hospital at 58 and died a year later.

A brother disappeared. A steady worker, quiet and good-natured, a weaver.

Somewhere in the forties he began to think that he could get gold out of stones; that moving picture companies had something to do with his stomach, making films from his feces to use against him. He could read secret symbols. On admission a tremendous hernia extended into the left scrotum; the same ideas occupied his mind; he had auditory hallucinations; he was well oriented and his emotional tone was normal.

AUTOPSY.—*The cause of death was intestinal obstruction.*

The brain weighed 1415 grams. The temporal lobes are softer than the rest of the brain. On the left side is a slight atrophy of the frontal region and flattening of the gyri in the motor region; these conditions are not so marked on the right. On section a cyst 4 mm. in diameter was found in the white matter of the left parietal region.

ANATOMICAL DIAGNOSIS.

Left inguinal hernia.
Bloody ascites.
Mesenteric lymphnoditis.
Congestion of lungs.
Chronic diffuse nephritis.
Valvular endocarditis.
Hypertrophy of heart.
Chronic fibrous myocarditis.
Interstitial fibrous splenitis.
Chronic perisplenitis.
Atheroma, general.
Chronic pachymeningitis.

MICROSCOPIC EXAMINATION.

Perivascular cell pigmentation moderate to slight.

Neuroglia cell pigmentation moderate, uniform.

Nerve cell pigmentation everywhere slight.

CASE 25 is a man who became insane at 46, entering the hospital a month after the onset and dying three months after.

There was a negative family history. The patient had been a student at Harvard and successful at business and politics. At 24 he had a syphilitic iritis. He married at 41; had no children. At 44 he suffered from pain in his head and jaw and all his teeth were extracted.

A month before his admission at 46 he was unconscious for twenty-four hours and then very dull with intervals of brightness. He said that he "was dead and could not eat"; if he drank milk "someone else got it." On admission the pupils were irregular, unequal, with a slight reaction to light. There was tremor; reflexes were not disturbed. He was probably oriented. "I ain't a live man." "My leg is nothing but bone." "You can hit my leg with a hammer and not hurt me." "I have no pulse—no name." He was indifferent, irritable; finally had to be tube-fed. Wassermann in the blood serum strongly positive.

The cause of death was *bronchopneumonia*, possibly related to an acute *ulcerative gastritis*. There was an *acute renal degeneration* on the basis of a *chronic interstitial nephritis*. *Aortic*, slight *coronary* and slight *basal cerebral arteriosclerosis*.

Among chronic lesions were *endocarditis*, *splenitis*, *peresplenitis*, *perihepatitis*, *pleuritis*. Slight *hydrothorax* and *pericardium splachnoptosis*. *Trochanteric decubitus*. *Emaciation*.

The brain weighed 1410 grams (Tigges' formula yields 1448 grams for subject 181 cm. long). The dura was adherent on the left side (frontal) and on right side (temporal and occipital—see remarks on inequality of hemispheres *infra*). Sulcal leptomeningitis along vessels (vertex, frontal, along longitudinal fissure).

Brain consistence increased, "doughy," especially prefrontal and precentral.

Cervical spinal dura thickened (cf. Wassermann serum positive). Spinal gliosis (no evidence of degeneration by Weigert method unless faintly in the cervical Goll).

The most striking feature of the brain is the *inequality of the hemispheres*, the left being longer than the right by about 1 cm. in greatest antero-posterior diameter. The *shortening* of the right hemisphere appears to be chiefly at the expense of the polar tissues and more particularly of the *frontal* polar tissue. The *occipital* polar regions differ in that the left pole is more tapering, whereas the *right pole* seems *compressed* forwards and downwards to yield an impression of greater bluntness and a tendency to the formation of a flattened posterior surface instead of a conical pole. There is, along with this shortening, little or *no evidence of distortion*, and

bilateral symmetry prevails everywhere except in the polar convolutions. The convolutions of the under surface of the right frontal region fail to show definite signs of compression or redistribution of tissue; but on the other hand, the lower contour of the right temporal region suggests by a well-defined bulge (toward the posterior end of the third temporal convolution) that the tissues of this region have been antero-posteriorly compressed between the anterior face of the middle cerebral fossa and that hollow of the occipital bone which receives the occipital lobes. Unfortunately no exact data as to either the capacity or—what would be more important—a bilateral volume-comparison between the two middle fossæ are available.

A study of interior conditions yields some pertinent data. Thus the ventricles, wherever they appear in coronal sections, have not the same shape on the two sides, and posteriorly the *right ventricle* is appreciably *smaller than the left*. This condition strengthens still further the idea of right-sided compression which the brain may have undergone at some remote and probably very early date.

Moreover a study of the color-contrasts, grey and white, as revealed by photograph seems to indicate that the grey-producing elements must be less in evidence in the right superior, middle, and inferior frontal convolutions than in their left-sided fellows. This whitening-out of right frontal grey matter is best marked far forward (prefrontal region) and not at all marked in the orbital convolutions. A similar less well marked differentiation between right and left affects a coronal section taken through the occipital tissues: here especially appears to suffer a convolution inferior to the calcarine fissure.

The anterior ascending Sylvian branches are marked on both sides, and these so-called *intermediate precentral areas* give a certain impression of poor development (or, what seems less likely, atrophy) on both sides.

The corpus callosum has a good area of cross-section, but there is nevertheless a moderate thinning anterior to the splenium.

MICROSCOPIC EXAMINATION.

Little or no pigment in any of the cell types.

V. CLINICAL SUMMARY.

SEX.

There are 15 female and 10 male cases in this series. The greater proportion of depressed cases, the association with the menopause, the occurrence of symptoms referable to the thyroid, tend to make of the women a more united group.

HEREDITY.

The family histories of three cases are unknown (8, 14, 15). Those of six cases (1, 5, 10, 20, 24, 25) are good.

In two cases (6, 11) a cousin is insane; in three (17, 12, 13) an uncle or aunt; in one (23) both an uncle and a cousin.

In five cases (7, 9, 16, 19, 21) a father or mother is insane; in three cases (2, 4, 18) a brother or sister; in one case (22) both a father and a sister; in another (3) both a mother and a brother.

In three cases, then, we know nothing of the hereditary factors; in six cases they are good; in 16 insanity appears in other members of the family and in 10 of these it appears in the parents or brothers or sisters.

Hereditary factors appear in 74 per cent of the cases with adequate history.

ANTECEDENT FACTORS.

The menopause was present at the onset of the first mental attack in seven of the fifteen women, and probably in one other case. In two or three more instances onset came within a year after the menopause. In two cases (9 a depression and 13 an excitement) onset preceded the menopause. Uterine cancer preceded the mental symptoms in one of the remaining cases and in the other we have no data.

In two cases extreme adiposity was associated with the onset of mental disease—in a woman with myxedema (15) and in a man (22) with pancreatic lesion.

As might be expected in the personalities of a group which has reached the forties without breakdown, only one is described as seclusive and peculiar (14, probably dementia præcox) while of those described 14 out of 16 are regarded as "normal, cheerful, sociable."

In trying to find how much arteriosclerosis was present near the onset of the psychoses we have used the history, the physical examination and the autopsy report—the last item losing its value as the age at death draws away from the age at onset.

Our group, from which the post-apoplectic cases had been ruled out, showed few evidences of early arteriosclerosis. Case 10 gave some clinical signs of arterial disease at 50 which autopsy at 52 failed to substantiate; so with cases 11 and 20. Three men (16, 17, 18) showed arteriosclerosis clinically and anatomically which probably dated back to the onset. Another man (19), generally sclerotic, showed neither the mental nor microscopical pictures

which usually are associated. Case 25 began with a curious stupor (catatonic or apoplectic) and at autopsy arterial change was very slight.

Enlarged or abnormally functioning heart was noticed in six cases near the onset (7, 8, 10, 15, 18, 19). In two (4, 9) indigestion was regarded as an upsetting factor. Onset followed a cancer in case 5, hernia in case 24, a severe burn in case 3. One woman (4) had been deformed from infancy.

Cases 6 and 10 apparently broke down under unusually heavy domestic burdens.

Alcohol was prominent in the histories of two men (16, 22).

GENERAL CLINICAL FEATURES.

As the shortest way to bring the summary of disease courses to mind we present the following table of ages at onset, subsequent attacks, and death.

TABLE II.—AGE AT ONSET, SUBSEQUENT ATTACKS, AND DEATH.

Case.	Sex.	Age at			Duration of	
		Onset.	Subsequent attacks.	Death.	Attacks.	Life after onset of first attack.
1	F	48	52-56-65	65	5 years	17 years
2	F	42	Continuous	50	8 years	8 years
3	F	50	73	73	10 months	24 years
4	F	47	50	67	17 years	20 years
5	F	42	Continuous	42	7 weeks	7 weeks
6	F	44	Continuous	46	18 months	18 months
7	F	46	46-58	59	10 years	13 years
8	F	49	Continuous	62	11 years	11 years
9	F	46	Continuous	46	6 months	6 months
10	F	50	50-51	52	14 months	2 years
11	F	44	Continuous	48	4 years	4 years
12	F	47	One a year?	75	many years	28 years
13	F	43	Many, 8	68	many years	25 years
14	F	45	3 times a yr. for 11 yrs.	56	5 years?	11 years
15	F	44	Continuous	48	3 years	3 years
16	M	47	47-50	50	2 yrs. 9 mo.	3 years
17	M	45	Continuous	46	19 months	19 months
18	M	43	Remissions	46	3 years	3 years
19	M	49	Continuous	49	5 months	5 months
20	M	41	Continuous	47	5 years	5 years
21	M	44	44-47-62	70	9 years	26 years
22	M	41	41-46	47	2 years?	6 years
23	M	45	Continuous	57	12 years	12 years
24	M	46	Continuous	59	13 years	13 years
25	M	46?	Continuous	46	4 months?	4 months?

Attacks with recovery characterize six persons (1, 3, 12, 13, 21, 22).

Remissions characterize six cases (4, 7, 10, 14, 16, 18).

Continuous progress was observed in thirteen instances (2, 5, 6, 8, 9, 11, 15, 17, 19, 20, 23, 24, 25).

The longest continuous courses, 12 and 13 years, were in paranoid men. The durations of the others in order were: 11 years, 8, 5, 4, 3, 1.5, 1.5 years, 6, 4, 4 months, 7 weeks.

The most striking difference in durations of disease and life appeared in case 3, who in 24 years was ill 10 months.

Delusions characterized all the patients except one (15). The most prominent group is the somatopsychic, which appears in fourteen of the records (3, 4, 5, 6, 7, 9, 10, 11, 17, 18, 19, 22, 24, 25). Delusions of persecution are found in six cases, those in women having a sexual tinge (6, 7, 14, 20, 23, 24); allopsychic delusions appear also in seven other instances (2, 3, 9, 11, 19, 24, 25). Self-accusatory ideas appear in ten (1, 2, 3, 4, 6, 9, 11, 12, 16, 17); grandiose ideas in four (2, 4, 13, 21); ideas of self-unreality in two (19, 25); a total of 14 patients in whom autopsychic delusions are obvious. Delusions of negation appear in five (2, 3, 17, 19, 25) and of unreality in four cases (6, 11, 19, 25).

With reference to the somatic delusions, especially those of hypochondriacal sort, it is interesting to note that the actual physical conditions were rather worse (with allowance for obvious absurdities) than the patients' complaints would lead one to believe. Apparently the patient is apt to be nearer the truth than the observer who sees many superficial inconsistencies in his tale of woe.

Signs of *dysthyroidism* appeared in 4 cases. Cases 1, 2 and 14 showed exophthalmus with high pulse rate. Case 2 showed tremor also. Case 15 showed myxedema, obesity. Case 22 showed obesity with pancreatic lesion.

Apprehensiveness is a marked feature of ten cases (1, 2, 3, 6, 8, 9, 12, 18, 19, 20).

Hallucinations are shown definitely in 14 cases, and probably in 3 more, out of the 25 under consideration. The auditory type in thirteen (1, 2, 7, 8, 9, 11, 12, 13, 16, 18, 22, 23, 24); the visual in six (8, 11, 12, 13, 16, 18), always combined with auditory; the olfactory type in one (14).

Memory defect was brought out in only two instances (1, 23, 7?) and then late in the disease, at the ages of 56 and 65.

Orientation was good in almost every case; in two only was it partially disturbed in the early course of the disease (14, 15).

DIAGNOSIS.

We hesitate to fit a diagnosis, according to the classifications now in vogue, to these disease forms, and we recall the sentence of Kraepelin to the effect that the field of the presenile psychoses is to-day the darkest in all psychiatry.

Our attempt gives us the following result:

TABLE III.

- | | |
|----------|--|
| Case 1. | A manic-depressive condition complicated finally by arterio-sclerosis. |
| Case 2. | A manic-depressive depression with involuntional coloring. |
| Case 3. | Two attacks of manic-depressive depression. |
| Case 4. | Manic-depressive depression. |
| Case 5. | Symptomatic depression. |
| Case 6. | Manic-depressive depression with involuntional coloring. |
| Case 7. | Arteriosclerotic dementia. |
| Case 8. | (Apprehensive excitement with dementia.) |
| Case 9. | Manic-depressive depression of the involuntional type. |
| Case 10. | Manic depressive depression. |
| Case 11. | Presenile psychosis. |
| Case 12. | Manic-depressive; both phases. |
| Case 13. | Manic-depressive manic with dementia. |
| Case 14. | Dementia præcox? |
| Case 15. | Myxedematous insanity. |
| Case 16. | Manic-depressive; both phases. |
| Case 17. | Manic-depressive depression with arteriosclerosis. |
| Case 18. | Arteriosclerotic dementia, depressed state. |
| Case 19. | Manic-depressive depressed (Cotard). |
| Case 20. | Presenile psychosis with catatonic features. |
| Case 21. | Manic-depressive manic. |
| Case 22. | Manic-depressive mixed. |
| Case 23. | Presenile psychosis with catatonic features. |
| Case 24. | Dementia præcox. |
| Case 25. | Manic-depressive depressed. |

The diagnosis of a manic-depressive condition, then, is indicated in 15 of these cases, while three seem to fall under the heading of presenile psychosis, and only two under arteriosclerotic dementia.

If in a series of 124 cases arising in the forties, with the returns from gross and microscopical post-mortem examinations to help, we can find only 11 cases (2+9 in the post-apoplectic group) which deserve to be called arteriosclerotic dementia, this diagnosis is one to be very guardedly made by the clinician.

VI. ANATOMICAL SUMMARY.

Placing our cases in order of age at death we naturally find a general increase of arteriosclerosis with age. Comparing the ruled-out group of post-apoplectic cases, we may claim that our group has been lightly touched by arterial disease. Of the 13 cases over 50 the basal cerebral vessels were free of gross change in 7 instances.

The following table of brain weights shows 7 female cases underweight, one over; 3 male cases overweight, none under.

TABLE IV.—BRAIN WEIGHTS.

Case.	Age at death.	Brain weight.	Tigges' formula.	Case.	Age at death.	Brain weight.	Tigges' formula.
4	67	1040	1184 —	12	75	1310	1264 +
8	62	1085	1160 —	22	47	1320	1312
6	46	1105	1304 —	21	70	1360	1344
13	68	1105	1280 —	17	46	1395	1344 +
10	52	1155	1240 —	25	46	1410	1448
3	73	1195	1304 —	20	46	1410	....
1	66	1200	1216	24	59	1415	1384
5	42	1240	1248	19	49	1445	....
14	56	1245	1216	16	50	1450	1368 +
9	46	1260	1216 —	18	46	1475	1248 +
11	48	1310	....	....	....	....	....

Tigges' formula (height in centimeters x 8) is used as a ready means of obtaining the expected weight of the normal brain.

The distribution of pigment through the brain cells can be shown roughly in tables, if we represent no pigment by 0, slight by +, moderate by ++, marked by +++, and an extreme amount by +++. It is often necessary to indicate two degrees of pigmentation in the same area, and to mark *var* those areas where there was marked variability in the pigmentation of the cells throughout one field.

TABLE V.—PIGMENT DISTRIBUTION.

Case.	Duration of life after onset.	Perivascular cells.	Glia cells.	Nerve cells.
5	7 weeks	0	0 (+ occip)	0
25	4 months	0	0	0
19	5 months	+++	+++	+++
9	6 months	+	+++ (except g. rect.)	0
6	18 months	+	++ to +	+
17	19 months	++ (+ + present)	++ or +++	++ (+ + present)
10	2 years	0	0 (+ occip)	0
18	3 years	0	++	+++
16	3 years	0	+	+
15	3 years	+++ (0 present)	+++	+++
11	4 years	+ var	+ to +++	0 to +++
20	5 years	+++	++++	+++ var
22	6 years	++	++	++ var
2	8 years	++ to +	++ to +	+ to ++
14	11 years	++	++	++
8	11 years	+++	+++	+++
23	12 years	++	++	++ var
7	13 years	+++	+++	+++
24	13 years	++ to +	++	+
1	17 years	+++	+++	+++
4	20 years	0	++	+++
13	23 years	+	+	+
3	24 years	+	++ (+ + + occip)	+
21	26 years	+++	+++	+++
12	28 years	+++	+++	+++

If we contrast Cases 21, 3 and 12, dying at 70, 73, and 75 years respectively with Cases 5 (dying at 42) and five others, 20, 9, 6, 18, 17 (all dead at 46), we find that all three septuagenarians show pigment in the three loci, whereas those who died at 42 (one case) and at 46 (6 cases) show as a rule (5 cases) little or no pigment in the perivascular and nerve cell loci but somewhat marked variations in amount in the neuroglia cell locus (2 cases negligible amounts). It must be remarked that one of the septuagenarians showed very slight amounts of pigment in any locus (except calcarine neuroglia), and this case (3) was precisely a case in which, although 24 years had elapsed since the first attack, the patient had been mentally normal in the interval. In contrast with this, we may mention 20, with maximal pigment in most loci (especially neuroglia; nerve cell locus variable in amount); this case had cyanosis of extremities and phthisis.

TABLE VI.

Case No.	Age at death.	Perivascular cells.	Glia cells.	Nerve cells.
5	42	o	o (+ occip)	o
6	46	+	++ - +	+
9	46	+	+++ (except g. rect.)	o
17	46	+ (++ precent)	++ or +++	+ (++ precent)
18	46	o	++	+++
25	46	o	o	o
20	47	+++	++++	+++ var
22	47	++	++	++ var
11	48	+ var	+ - +++	o - +++
15	48	+++ (o precent)	+++	+++
19	49	+++	+++	+++
2	50	++ - +	++ - +	+ - ++
16	50	++ (+++ precent)	+	o
10	52	o	o (+ occip)	o
14	56	++	++	++
23	57	++	++	++ var
7	59	+++	+++	+++
24	59	++ - +	++	+
8	62	+++	+++	+++
1	65	+++	+++	+++
4	67	o	++	+++
13	68	+	+	+
21	70	+++	+++	+++
3	73	+	+ (+++ occip)	+
12	75	+++	+++	+++

THE RELATION OF ARTERIOSCLEROSIS TO FIFTH DECADE INSANITIES.

We may repeat for the fifth decade what was asserted for the sixth and seventh decades, "There seems to be no good ground for asserting that arteriosclerosis runs parallel with these insanities or has much more than a complicating relation to them." We except Cases 7 (?), 8 (?), 11 (?), 18.

Our case 3 is a good commentary on this assertion; psychosis at 50, health for 24 years, psychosis at 73, with a clinically and anatomically well-marked sclerosis which, we infer, developed without any corresponding mental change.

CORRELATIONS WITH SENILE ATROPHY.

The weight of the heaviest female brain is less than that of the lightest male. Seven of the female brains are underweight

by Tigges' formula: none of the male brains is underweight. Duration of disease does not run parallel to the weight variations. On the average, however, the duration of life after onset was 11 years in the women, 7 in the men; this offers a rough correlation, not very satisfactory in view of the fact that the oldest man and the oldest woman had overweight brains.

RELATIONS TO DISORDERS OF INTERNAL SECRETION.

The menopause was found closely associated with onset in most of the women; while this is to be expected, it is not less important because obvious. That lack of thyroid secretion should apparently cause the psychosis in one case, and increased secretion appear in three cases a year or more after onset, is surprising in a group of 15 women chosen as these were.

RELATION OF FIFTH DECADE INSANITIES TO DEMENTIA PRÆCOX, TO MANIC DEPRESSIVE PSYCHOSES AND INVOLUTIONAL MELANCHOLIA.

One may well hesitate to make a diagnosis of dementia præcox in any of this group. There seems to be little doubt in the case of a man with foolish paranoid ideas and lack of affect (24). The catatonic symptoms in three other cases (23, 20, 14) we may regard, as Kraepelin now suggests, as having only a superficial resemblance to the symptoms of the earlier decades.

The traits of the manic depressive psychoses, however, are seen everywhere in this group, and form a most tantalizing problem. We can say, without taking much for granted, that case 3, with its widely separated depressions, and case 21, with its distinct manic attacks, are pure cases (old recurrent melancholia and mania). We can imagine little objection to saying that five other cases are essentially manic-depressive but complicated by mental symptoms associated with arteriosclerotic (1, 13, 12, 17) and senile (4) changes. It is hardly worth while to consider manic-depressive insanity as applicable to the myxedema case (15), the paranoid woman (14), or the case classed above as dementia præcox. This leaves us with 15 cases, all of them liberally sprinkled with manic-depressive traits, all of them incomplete forms, almost all presenting facts hard to reconcile

with any diagnosis. A strange group, selected because of its lack of certain characteristics, yet in some degree possessing common features—depressed, but with more cause than usual for the depression, clear, not sclerotic, not atrophic, showing striking but not uniform evidence of disturbance of internal secretions, and great variability in the outcome.

Starting this study with only a method, and no theory to prove or attack, it seems to us that the result has been to drive into the open a curious set of cases (an involution group) and make evident a further line of attack, a similar study of the decade just below them.

SUMMARY AND CONCLUSIONS.

1. We have reviewed a group of 25 cases of mental disease (Danvers State Hospital material), so selected as to offer a fair sample of mental diseases arising in the fifth decade of life.

2. Our principle of selection excluded all cases which were obviously *not* characteristic of the fifth decade (paresis, alcoholic mental disease, and the like); the group of non-characteristic cases thus excluded was extremely large (approaching 80 per cent of all cases arising in the decade) and the preventable diseases alone amounted to over 60 per cent.

3. We remained with a group of 25 cases (10 males and 15 females) which present certain common aspects. These cases may be *negatively* defined as *not* due to syphilis, alcohol, cerebral arteriosclerosis, brain atrophy, or other factors yielding coarse brain disorder; as not possessing pronounced schizophrenic features; as not uniform in course or outcome; as not likely to show either elation or expansive delusions. They may be positively defined as almost, if not quite, constantly subject to delusions at some stage in each case; as yielding manic-depressive traits in the large majority of cases; as prone to depressive features; as possessing a strong hereditary taint (74 per cent of properly studied cases); as not infrequently suggesting disorder of glands of internal secretion.

4. The delusional features, present in all cases (save one of myxedema), were not characteristically of any particular form; the delusions were somatic in 14 cases; dealt with various alterations of personality in 14 cases (combined with somatic delusions

in 8 instances); and (superficially at least) dealt with the social environment in 13 cases (6 times combined with other forms).

5. As to somatic delusions, it is further of note that a physical basis could be recognized for many of them in diseases of the viscera; and that, on the whole, these visceral counterparts of the delusions were more serious than the patients' complaints themselves.

6. Delusions of negation (5 instances) and of unreality (4 cases) do not bulk so large statistically as they are apt to in descriptions of so-called involution-melancholia.

7. The group, taken as a whole, is far more suggestive of manic-depressive insanity than of dementia præcox or of any other form of mental disease.

8. On the whole, depression is the most common manic-depressive feature of these cases: but the constant occurrence of various delusions alongside the depressive emotions makes the latter seem far from "causeless," certainly not so causeless-looking as the depressions of manic-depressive insanity.

9. It cannot be dogmatically asserted; but, on the whole, these patients seem more dominated by various ideas and by various more or less false beliefs than are the manic-depressives of earlier decades, and are perhaps more victims of intellectual than of emotional or volitional disorder. However, this may be more appearance than reality, and further work may again pull the emotions, and particularly the depressive emotions, into the genetic foreground.

10. As to the designation "involution-melancholia" for these cases, it may be surmised that the term was adopted by alienists having *unpleasant delusions* at least as much in mind as *unpleasant mere emotions*. Perhaps it is unwise to seek to overthrow the classical term before more intensive work has been done on the actual relation of the intellect to the emotions in this group: how far then, it may be asked, is the melancholia of involution merely systematic and responsive to intellectual conditions?

11. Since Freud has claimed a sexual basis for paranoia and even perhaps for paranoic states falling short of paranoia, it is fair to inquire how far the present group has a sexual basis: three of the fifteen female cases in our series harbored rather systematic delusions of persecution, and all three systems had a sexual tinge.

This fact, allocated with the not infrequent tendency to disorder of glands of internal secretion in certain cases, ought to provide a fruitful field for psychoanalytic hypotheses.

12. Hallucinations, as a rule auditory, were observed in something like 60 per cent to 70 per cent of the cases: there are *à priori* reasons (Wernicke) for relating these with the unpleasant delusions characteristic of the group; but, whether the false beliefs irradiate over to incite the hallucinations, or whether the hallucinosis is a prime factor in producing the false beliefs, must remain an open question: statistically we should be forced to favor the former process.

13. The post mortem data throw some light on the negative definition of our group (see paragraph 3 *supra*). There appears to be little or no evidence that the metabolic disorder, if there be such underlying this group, tends to brain wasting.

14. Our study of the distribution of certain chemically ill-defined lipoids (or pigments, as we have called them) shows that age plays some part in the amount of deposits, perhaps more in the neuroglia cells than in the nerve-cells, and least of all in the perivascular phagocytes.

15. All cases living three years or more after onset of symptoms show more or less marked accumulations of pigment in neuroglia cells; the same cases show a greater variability in the nerve-cell accumulations; occasionally such a three-year or over-three-years case will show a negligible amount of pigment in perivascular phagocytes.

16. These pigment-findings are in substantial agreement with those of Southard-Mitchell, 1908:

(a) "Perivascular cell pigmentation almost uniform in different areas of the same case." The present series presents only two instances of marked variability from area to area.

(b) "Neuroglia cell pigmentation * * * varies more or less directly with age." Our present group presents more variation than did the former; there is however no absolutely negative case over 46 years of age.

(c) "Nerve-cell pigmentation is not a function of age." Two cases of 50 years or more showed no appreciable amount of pigment, and three others showed but slight amounts. The

variations in amount within a given brain are more striking than the variations shown by the neuroglia cell pigments.

17. That these three loci for the deposition of pigment tend at last to a species of saturation is indicated by the fact that the *even* degrees of moderate or of marked pigment deposit in all loci begin to appear in the later years of life (one case at 49 years, one at 56, and the rest from 59 to 75 years).

18. The fresh point of view thus obtained for the problem of involution-melancholia by our study of fifth-decade insanities may be stated as follows:

Involution-melancholia has been regarded as possibly akin to manic-depressive insanity or even identical therewith or as possibly something quite different. Perhaps the majority of psychiatrists would regard it as a disease akin to manic-depressive insanity but modified by climacteric or presenile changes and distinguished from manic-depressive insanity by the peculiar tendency to depression which has given it its name. The novel feature of our investigation has been to study the age-factor. We have studied unselected cases arising in the fifth decade of life, excluding all coarse organic cases of brain lesion. Our resultant group is, we believe, although small, otherwise ideally representative of the conditions underlying mental disease at this age-level. Our group includes a sufficient number of the familiar cases of involution-melancholia as well as cases of delusional insanity without melancholia. The striking fact is that the *melancholia cases* prove also *delusional*. In so far as our group is representative of the fifth decade, we believe that the essential *psychopathia involutivis* is characterized by delusions, that in the large majority of cases melancholia is a feature superadded to the delusions, and that in a smaller majority of cases hallucinosis also occurs. The fact that melancholia may assert itself as the most prominent symptom in the clinical foreground fails to controvert the possible genetic importance of the delusions. As to the cause of *psychopathia involutivis*, it is easy to invoke the glands of internal secretion; and of their disorder there is actually some sign in a number of cases. Whether such disorder or some unknown factor determines the over-pigmentation (lipoid accumulations) in the cortex above noted, and whether these deposits have a direct relation to the symptoms must rest with the future.

REFERENCES.

1. Southard and Mitchell: Melancholia with Delusions of Negation: Three Cases with Autopsy. *Journ. Nervous and Mental Diseases*, May, 1908, Vol. XXXV, No. 5, p. 300.
2. Southard and Mitchell: Clinical and Anatomical Analysis of 23 Cases of Insanity Arising in the Sixth and Seventh Decades, with especial Relation to the Incidence of Arteriosclerosis and Brain Atrophy and to the Distribution of Cortical Pigments. *Am. Journ. Insanity*, Vol. LXV, No. 2, Oct., 1908.
3. Bevan Lewis: A Text-Book of Mental Diseases with Special Reference to the Pathological Aspects of Insanity: Part III, Pathological Section, General Pathology and Morbid Anatomy. Two editions, 1890, 1899.
4. Alois Alzheimer: Beitrag zur Kenntnis der pathologischen Neuroglia und ihrer Beziehungen zu den Abbauvorgängen in Nervengewebe. Histologische und Histopathologische Arbeiten über die Grosshirnrinde. Vol. III, 1910, p. 412.
5. Alford: Ten Obscure Cases of Mental Diseases: A Clinical and Anatomical Study, *Boston Med. Surg. Jour.*, 163, 1910 (being contribution No. 4, Charles Whitney Page Series, Danvers State Hospital Papers).

THE DISTRIBUTION OF THE LESIONS OF GENERAL PARALYSIS.

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This analysis of the distribution of the lesions in general paralysis was taken up with the hope of adding to the data of the anatomical distribution of the lesions and possibly of throwing some light on the mechanism of infection. The gross appearance of the brain gives by means of the pial thickening and atrophy some indication of the relative severity of the process, but microscopic examination will in many instances show that the meningeal involvement is not a safe guide to the amount of cortical damage, and atrophy is at best a coarse index which reveals only the more advanced changes.

Tuczek on the basis of work done by the Weigert myelin sheath method arrived at the conclusion that the anterior part of the brain was most severely attacked, that the vertex was prone to suffer early and that the occipital region was less involved though not always free. Shaffer using the same methods suggested that the brunt of the lesions was borne by the association centers leaving the sensory cortices relatively free thus grouping the attack as a sort of system disease. Kaes held that the process was an outspoken diffuse one spread over the whole cortex, but variable in its intensity. Alzheimer on the data obtained from his classical study, and based on a wide variety of methods including cell and glia preparations, concludes that in the rapidly progressive cases the lesions are widespread and of approximately equal intensity. In the majority of the cases, however, the orbital gyri suffer the most and next in order the frontal pole and frontal half of the convexity. The occipital pole is commonly though not always the region showing the least severe involvement. In long standing cases with advanced dementia, marked paresis, etc., the distribution is again widespread. Mott has made the suggestion that the distribution is due to the relation of the venous return from

the cortex into the superior longitudinal sinus and that those areas in which the return system favors congestion are the earliest and most severely attacked.

For the present study the index used was a combined one based on the amount of perivascular infiltration and the degree of stratigraphic disturbance. This method is open to the objection that it does not take into account the glial changes nor the less prominent cell losses which, when diffuse, may be of considerable amount and yet not readily recognized except by accurate cell counts which would prove too laborious for such a large series of cases as the present.

The routine adopted in the laboratory of the Worcester State Hospital includes sections fixed and stained by three standard methods for the display respectively of the cell, fiber and glia content from six areas of each hemisphere in all cases except those reserved for more intensive or special study. These areas are precentral, postcentral, frontal, temporal, occipital and the hippocampus and cornu ammonis.¹

The material used was for the most part from material fixed in alcohol and stained by Nissl's method. The remainder was formalin material and was stained in thionin. All sections were cut in paraffin at 10μ and should be fairly comparable.

In order to reach some comparison of the severity of the involvement in various areas some empiric standard was necessary, and the following scheme was adopted. A zero indicates those areas where the lesions were of such minor grade that one would hesitate to accept them without further data as diagnostic of paresis. In this group the meningeal lesions were purposely omitted from consideration. A single plus sign designates areas with lesions of sufficient severity for ready diagnosis, but without noticeable cell disturbances. A double plus sign refers to sections showing advanced perivascular infiltration with or without slight disturbances of lamination. A triple plus sign indicates advanced vascular lesions with distinct stratigraphic disturbance.

Fifty cases were reviewed in this way and the results may be recorded in tabular form.

¹ The exact location of these sections is diagrammatically indicated and the technical methods are described in an article by the writer in the *Am. Jour. of Insan.*, Vol. LXIX, No. 2, Oct., 1912.

SAMUEL T. ORTON

No.	Case	Pcl.	Pocl.	F.	T.	Occ.	C. A.
1	XIV-38	++	+++	+++	+++	+++	++
2	XIV-63	++	++	+	+	0	+++
3	XV-23	+	+	+	++	+	++
4	XV-24	+	+	++	++	+	++
5	XV-31	++	++	+++	+++	0	+++
6	XV-33	++	++	++	+	+	++
7	XV-34	+++	+++	+++	+++	+++	+++
8	XV-35	++	++	+++	++	0	+++
9	XV-36	+	+	+	+	0	+
10	XV-39	++	++	+++	++	++	+++
11	XV-41	+	+	++	++	0	++
12	XV-47	++	++	++	++	+	+++
13	XV-51	++	++	++	+	0	++
14	XV-52	+++	+++	+++	+++	+++	+++
15	XV-53	+++	+++	+++	+++	+	+++
16	XV-55	++	++	+++	++	0	+++
17	XV-61	+++	+++	+++	+++	+	++
18	XV-64	++	++	+++	++	0	++
19	XV-70	++	+	++	++	0	++
20	XV-72	+++	++	+++	+	+	++
21	XV-76	+++	+++	+++	+++	+	++
22	XV-83	+++	+++	+++	+++	+++	+++
23	XVI-4	+	++	++	++	0	+
24	XVI-7	+	+	+	+	0	+
25	XVI-9	+	+	+	+	+	+
26	XVI-14	++	++	++	++	++	++
27	XVI-15	++	++	++	+	0	+
28	XVI-26	++	+++	+++	++	0	++
29	XVI-33	++	++	++	++	++	++
30	XVI-45	+	+	++	++	0	++
31	XVI-47	++	+	+	++	0	+++
32	XVII-1	+++	+++	+++	+++	+++	+++
33	XVII-8	++	+	+++	++	0	+++
34	XVII-12	++	+++	+++	++	++	+
35	XVII-15	+++	+++	+++	+++	+++	+++
36	XVII-19	+++	++	+++	++	++	+++
37	XVII-22	+++	+++	+++	+++	++	++
38	XVII-24	+	+	+	+	+	+
39	XVII-27	+	+	++	+	+	+
40	XVII-35	++	++	+++	+++	++	++
41	XVII-42	++	+	++	+	0	++
42	XVII-58	+	+	+	+	0	+
43	XVII-62	+++	+++	+++	+++	+++	+++
44	XVII-64	++	++	+++	++	++	+++
45	XIII-2	+++	+++	+++	+++	+++	+++
46	XIII-5	++	++	++	++	+	++
47	XIII-9	+++	+++	++	++	++	++
48	XIII-13	++	++	++	+++	++	+++
49	XIII-18	+	+	++	++	+	++
50	XIII-19	+++	+++	+++	+++	++	++
Totals		103	101	117	104	59	111

The totals by columns while not accurate in their representation still show the relative severity of the process in the six areas under consideration, and the figures indicate fairly clearly that the average intensity follows Alzheimer's description of the distribution in the typical case. The cases of this series were not selected and hence probably include those of rapidly progressive type and those of more chronic course. A further review of these points is planned.

The relatively marked involvement of the hippocampal area—standing next to the frontal in the tables—is at first sight rather striking and suggests an almost selective vulnerability for this region which is of especial interest when one considers the frequency of epileptiform attacks in general paralysis and the association of lesions of the cornu with acquired epilepsy.

It is worthy of note that in the fifty cases reviewed here no cases of clearly unilateral distribution were encountered. Some showed marked variation in severity between the sections representing the same gyrus in the two hemispheres, but in none was this consistent throughout the six areas studied. No cases were encountered where the lesions seemed to be distinctly focal in type.

The typical topographic distribution on which rests without doubt the symptom complex of the typical case suggests that in all except the rarer forms the attack cannot be considered as haphazard or accidental, but rests probably on an anatomical basis.

Shaffer's conception of paresis as a system disease attacking the association centers is not tenable.

Mott's conception of the relations to the venous return to the longitudinal sinus could hardly be applied to the hippocampus with its relatively free venous return.

Histological studies have shown that general paresis cannot be considered as a selective vascular disease, but that there is accompanying the perivascular infiltration a marked amount of cell degeneration and destruction at some distance from the diseased vessels.

The demonstration by Noguchi and Moore of the treponema pallidum in the brains of cases of general paralysis necessitates the abandonment of the conception of this disease as a pernicious metabolic disturbance set up by the syphilitic infection, *i. e.*,

parasyphilis, and makes it necessary to consider distribution from the standpoint of a true infection amenable probably to the known factors governing channels of infection in other diseases. With this idea in view and excluding accidental distribution as above suggested one might consider the problem from the standpoint of: first, vascular supply both arterial and venous; second, lymph channels; third, direct invasive spread; fourth, selective resistance of given areas; and fifth, local structural factors.

The fourth consideration would seem to be excluded by the lack of clear-cut system involvement. The lesions do not observe the boundaries of given fields, but are spread over an area which contains several types of cortex. The third class would seem to fit more accurately the curious cases of local atrophies with fairly sharp boundaries which are occasionally met in atypical cases, but scarcely covers the typical group.

Among the local structural factors must be considered the cerebrospinal fluid which shows cellular evidence in paresis suggesting its invasion. No report of recovery of spirochæta from the fluid in this disease has yet come to the writer's notice, though some negative reports are at hand.

The lymphatic supply of the brain stands in such close relation to the blood vascular system that they may be considered together.

The vascular supply of the anterior parts of the brain is derived from the two main branches of the carotid artery, *i. e.*, the anterior and middle cerebral while the occipital lobe—that part of the brain where the lesions are, in typical cases, less pronounced or even absent—receives its blood supply from the posterior cerebral which in turn arises by the bifurcation of the basilar. The circle of Willis with its one anterior and two posterior communicating arteries forms a path of anastomosis uniting the circulation of the anterior group with the posterior and of the right and left halves. Observations on only a small series of brains will, however, convince one of marked variations in size of the communicating branches, especially the posterior group, which must render the freedom of anastomotic interchange very variable. Recently some experimental work has been recorded by Kramer tending to show that this anastomotic pathway is probably only active when marked variations in pressure, such as those associated with pathological vascular conditions, exist and that under normal

physiological conditions it does not serve for any marked interchange of blood from one system to the other. This conclusion was reached after injection experiments, and the writer has been able to confirm the results in a series of cat brains. The method consists in the injection, given slowly to avoid introducing too great an element of pressure, of a strong solution of methylene blue into the carotid artery of one side and the immediate killing of the animal and removal of the brain. Under these conditions in the successful experiment the frontal fields and the anterior and middle portions of the convexity of one hemisphere will be found stained together with a small part of the opposite frontal region adjacent to the interhemispheric cleft, while the posterior part of the hemisphere on the side of the injection and all of the other hemisphere with the noted exception will be entirely free from gross visible evidence of the effect of the stain. In other words the stain injected into the carotid has reached the distribution of the two branches of this vessel and has been confined to this area except for a small amount which has passed through the anterior communicating artery into the opposite anterior cerebral. There is no evidence of active flow through the posterior communicating vessels. Kramer illustrates the mechanism of this distribution by means of a glass and rubber tube model of the circle and its branches and shows in this also that the stream fails to pass through the representatives of the posterior communicating arteries while the pressure in the two sides of the system remains equal.

In one of the experimental cats a small amount of blue coloring was in evidence in the anterior part of the hippocampal region. This led to an examination of the vascular supply of this area in a series of human brains. The anterior choroid artery arises from the middle cerebral or from the internal carotid, or as in one side of one brain examined from a large posterior communicating artery near its point of junction with the carotid system and after a short course gives off a prominent branch which penetrates the uncus hippocampi and supplies its cortex. This forms then a path of direct communication between at least a part of the hippocampal region and the carotid system of arteries and for the purpose of determining the extent of this supply recourse was had to methods of injection. In all, six brains were injected. Four

of these received colored solutions and records were taken from immediate sections. The two others received injections of colored gelatin and were cut after fixation of the injection mass. In one of each series the injection was given unopposed through the anterior choroid vessel. In the others Beevor's method of simultaneous injection at equal pressure was employed.

In brief the injection experiments showed the cortex of the uncus to receive its supply from this branch which also supplies the central white core of the cornu ammonis for a variable distance backward. The very apparent difference in the extent of injection in those brains in which the injection entered the anterior choroid artery only and those in which this was balanced by simultaneous injection of the posterior cerebral leads one to conclude that there probably exists a free anastomosis between the arterial twigs of the two systems at this point which in turn would imply a free anastomosis of the perivascular lymph channels.

These findings show the hippocampus to be within reach of infection traveling by the branches of the internal carotid and its associated lymph spaces and together with the facts of the general distribution of the lesions in the typical case suggests the carotid system as a path by which the infection might reach the areas of the brain most severely attacked. This conception does not of course explain the greater involvement of the course of the anterior cerebral as contrasted with that of the middle cerebral, but other factors such as the venous stasis suggested by Mott may also influence the spread of the process. The *treponema pallidum* has been shown to remain in the arch of the aorta over a long period of years and similar persistence in the cerebral vessels or a seeding to the cerebral system from such resistant foci gradually overcoming the resistance of the brain to invasion might readily be considered as part of the mechanism of the latent period between the syphilitic infection and the onset of the symptoms of general paresis.

Résumé.—A graduated review of the intensity of the lesions of general paralysis in six areas of each hemisphere of 50 unselected cases indicates the following order of severity—frontal, hippocampal, temporal, precentral, postcentral and with markedly less involvement the occipital. The circle of Willis does not act as a path of ready communication between the carotid and vertebral

systems. The hippocampal region receives a part of its blood supply from the carotid group thus including within the distribution of the branches of the carotid those areas where the lesions have been found to be prominent and suggesting this vascular system as the basis for the distribution in the typical case.

REFERENCES.

- Tuczek, 1884: Cited by Alzheimer.
Schaffer, 1902: *Neurologisches Centralblatt*.
Kaes, 1902: *Monatsschrift für Psychiatrie und Neurologie*.
Mott: Cited by Alzheimer.
Alzheimer, 1904: *Histologisches und Histopathologisches Arbeiten*.
Noguchi and Moore, 1913: *Journal of Experimental Medicine*.
Kramer, 1912: *Journal of Experimental Medicine*.
Beevor, 1907: *Brain*.

AMYLOID DEGENERATION OF THE BRAIN IN TWO CASES OF GENERAL PARESIS.

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In two recent communications (1911 and 1912) Mignot and Marchand¹² reported certain alterations in vessels of the cerebral cortex of a general paretic and extravascular lesions of like nature, deposits of variable size in the vicinity of the affected vessels, which displaced or destroyed by pressure the surrounding nervous elements. The walls of the affected vessels were thickened, homogeneous and refractile, their lumina narrowed or obliterated. These changes, while implicating some of the larger vessels, involved chiefly capillaries and pre-capillaries. In the larger vessels the process began in the media; in the capillaries it first appeared in the adventitia. The intima, though not immune, was less frequently a starting point. This vascular tunic seemed to offer a greater resistance to the invasion, for in many instances it remained unaffected long after the other portions of the vessel wall had undergone a complete change. The physical characteristics and tinctorial reactions of the extravascular deposits were identical with the changes in the walls of vessels. The whole process was interpreted as an amyloid degeneration. More recently (1912) Sioli³ reported a case, also a general paretic, which presented alterations of the same character, though here not disseminated, as in the instance first mentioned, but focalized on the surface of the right temporo-sphenoidal lobe in such manner as to be mistaken at autopsy for intracranial neoplasm. Here, too, the microscopical findings were looked upon as the expression of an amyloid degeneration, or, to quote exactly, as an "*amyloidähnlich Degeneration im Gehirn.*" These cited cases, in so far as the vascular alterations and the supposedly extravascular deposits are concerned, compare well with the few cases

of like nature recorded in the literature, dating from Billroth's⁴ observations in 1862.

In the literature these changes have been described in turn as *gelatinous*, *waxy*, *glassy*, *colloid* and *hyaline* degeneration of the brain. They have been described even under the rather indefinite heading *sclerosis* (Eppinger⁵), though in this particular instance the alterations were confined chiefly to the vascular apparatus—the affected vessel walls exhibited the characteristic physical and staining properties of hyaline. Finally, as noted above, the process has been more specifically classified as *amyloid* degeneration, but a possible transitional or pre-stage of amyloid had been earlier suggested (Arndt,⁶ Holschwenikoff,⁷ Alzheimer,⁸ *et al.*).

The greatest number of the recorded observations have concerned cases of general paresis. Other mental conditions with which these changes have been associated are imbecility, imbecility with epileptiform convulsions (Wedl,⁹ R. Maier,¹⁰) psychosis undetermined but probably the mental disorder of active cerebral lues (Alzheimer⁸), senile dementia (Vorster¹¹)—though here the interpretation of the reported observation is looked upon askance*—and hydrophobia (Wasilieff,¹² Benedikt,¹³ Kolessnikoff¹⁴). Similar alterations have been reported among the microscopical findings on a subject dying of a nervous disease, a case of amyotrophic lateral sclerosis (Spiller¹⁵). The well-described findings of Holschwenikoff⁷ were made on a subject which, so far as known, had not suffered from any psychosis, and the nineteen cases reported by Neelsen¹⁶ were also without a history of mental disease; they were found among a group of seventy-nine brains from persons of various ages, chiefly elderly subjects.

The identity of the alterations in Holschwenikoff's case with the process under discussion, however, has been questioned (Sioli³), on the ground that they are better classed with the more common hyaline degeneration of arteriosclerotic vessels. As a defense for his attitude, Sioli sets forth the presence of calcareous deposits in the affected areas of Holschwenikoff's case which

* Since this paper was presented at the Niagara Falls meeting of the Association the writer has received a reprint of Ziveri's case,¹⁸ a presbophrenic with amyloid changes identical with the vascular alterations described in Case II of this paper.

to him is *prima facie* evidence of their arteriosclerotic nature. Similarly, doubt has been cast on the findings of Neelsen (Alzheimer⁶). In Neelsen's nineteen cases conversion of vessel walls into a homogeneous substance was shown only for short stretches and this confined to the vessels of the outermost cortical lamina, most frequently at the points of branching, sometimes involving one side of the vessel, sometimes affecting it in an annular manner, but always sharply delimited. Alzheimer contended that the findings of Neelsen could not be included as examples of colloid degeneration (meaning the process under discussion), but must be considered as the hyaline change which arteriosclerotic vessels so frequently undergo. Moreover, it was pointed out that not only was the involvement greater in colloid degeneration than in ordinary hyaline degeneration of vessels, but that there were certain tinctorial differences. Alzheimer entered a plea for the use of *colloid* degeneration as a designation for the process here discussed, chiefly, however, to avoid confusion with the hyaline degeneration of arteriosclerosis. Among the things which he emphasized was the albuminous nature of the deposits and the possibility that they represented a pre-stage of amyloid conversion.

Colloid degeneration has been the favorite term with which these very striking changes have been designated, but it should be stated that where this term has been employed the old v. Recklinghausen conception of colloid is meant. v. Recklinghausen's colloid," as is known, includes mucoid hyaloid and amyloid degeneration. Colloid degeneration as now understood is restricted to certain altered cellular (epithelial) secretions, such as the substance found in the acini of the thyroid gland in disease states and advancing age, the homogeneous substance of retention cysts of the kidney, casts of the urinary tubules, the similar substance encountered in some ovarian cysts, certain adrenal tumors and in many tumors of other organs.

The varieties of explanations as to the origin and chemical nature of this conversion of vessel walls into homogeneous masses and of the other homogeneous deposits which have been considered as extravascular, even surpass in number the terms employed to designate the process. Thus we find the changes interpreted as a swelling and conversion into colloid substance of the adven-

titial and intimal cells which subsequently are welded together to form larger masses (Arndt,⁶ Schüle¹⁸); as originating from a diffuse interstitial encephalitis with an infiltration of colloid substance into the proliferated elements of the cellular glia and the proliferated cells of vessel walls (Billroth,⁴ Magnan¹⁹); as an albuminous degeneration of blood cells within the lumina and perivascular spaces of the affected vessels (Adler,²⁰ Oeller²¹); as a waxy degeneration not only of the proliferated cells of the vessel wall but also of the infiltrated cells of the perivascular space (Lubimoff²²); as products of post mortem origin (Wedl,⁹ Adler²⁰)*. As the result of various dyscrasias and acute processes, also of local circulatory disturbances, particularly increased blood pressure (Holschwenikoff⁷); as albuminous deposits undergoing further chemical elaboration—a pre-stage of amyloid degeneration (Alzheimer⁸); as a deposition of hyaline substance in the walls and lumina of vessels in a telangiectic area (Beadles²⁴); as a transitory stage of luetic nodular periarteritis (Witte²⁵) as a deposition of amyloid substance in a brain previously injured by a subacute meningo-encephalitis (Mignot and Marchand¹); and, finally, as the terminal stage of general parietic changes, comparable to the local amyloid changes in other chronically inflamed organs (Sioli³).

It is probable that some of the reported observations, even some of those to which reference has been made, cannot be considered as unquestionable examples of the process here discussed, criticisms of which may be found in the cited papers of Alzheimer and Sioli, and in other contributions to the literature of this subject. It is also quite probable that processes of the same character, particularly in those instances where there has been little doubt as to being confined to blood vessels, are described under other rubrics. So appears to the writer the case reported by Witte under the title, "*Ueber eine eigenartige herdförmige Gefässerkrankung bei Dementia paralytica*" and Beadles' case, "A telangiectasis of the Left Frontal Lobe with Epileptiform Convulsions."

* Interesting in this connection is Stilling's²³ interpretation of the origin of corpora amylacea, namely, as of post mortem origin, attention to which is called for reason of the possible relationship of corpora amylacea and the homogeneous deposits in the cases reported in this communication, discussed below.

It is interesting to note that, almost universally in recent papers, attention is called to the lack of any appreciable cellular and fibrillary reactions following upon these peculiar changes which, as in the case reported by Sioli, may reach enormous proportions. Even where the process is comparatively mild, restricted and apparently of recent origin, as in Case II of the present communication, there are few tissue reactions which may not be just as well explained as resulting from other causes. This is in striking contrast to the reaction commonly observed around the focalized deposits of the split products of pathological metabolism (*Abbau Produkte* of the Germans), where there is often not only a rich influx of phagocytic cells (*Abraumzellen*) of mesodermic and glial origin, but also, depending upon the age of the process, more or less glial fibrillosis. Whatever changes are shown by the nervous elements as the result of the deposits are overwhelmingly pressure changes—atrophies and displacements, and, in consequence of these, frequently a complete disappearance of nervous structures over areas of greater or less extent.

Though mindful of the views concerning the origin of amyloid bodies from myelin sheaths and other components of nervous elements, the case of myoclonic-epilepsy reported by Lafora,²⁶ Lafora and Glueck,²⁷ is the only instance known to the writer where amyloid, in the form of corpora amylacea, has been found within ganglion cells.* Stürmer,²⁸ in a recent defense of the glial origin of corpora amylacea in the central nervous system, prefers to consider the ganglion cell inclusions in Lafora's case as deposits resulting from cell degeneration of another nature rather than as amyloid degeneration of ganglion cells. Stürmer's objections, however, are not overconvincing, especially in view of what he lays down as a positive test for corpora amylacea, with which the structures reported by Lafora seem to comply. Looking, then, on the process discussed in this paper as an amyloid degeneration and the corpora amylacea as a form of this type of degeneration, Sioli's objections to Holschwenikoff's case, too, become less serious, if one accepts Siebert's²⁹ classification of the familiar amyloid bodies of the central nervous system into

* Mignot and Marchand, l. c., report amyloid deposits in some of the ganglion cells in their case, but this was of the nature of the deposits in walls of affected vessels.

corpora versicolorata and *corpora flava*. The latter group, according to Siegert, frequently undergoes calcification ("*sie verkalken sehr häufig*"), while the former never undergoes such change ("*sie verkalken nie*").

These observations on the corpora amylacea are interpolated for the reason that their characteristic iodine reaction is duplicated in some of the particular homogeneous deposits of which this paper treats. One may infer from well-described cases that the chemical composition of these very striking deposits is variable, for a differential staining of them has been made (Holschwenikoff,⁷ Alzheimer,⁸ Sioli⁹). Moreover, it seems agreed that corpora amylacea of the central nervous system, as well as amyloid deposits of other forms elsewhere in the body, are principally nitrogenous compounds, chiefly albuminous unions of high molecular valence. So that whether or not one accepts the gliogenic, neurogenic, lymphogenic or hemogenic theories of the origin of corpora amylacea or other forms of amyloid, the suggestion of a pre-stage of amyloid degeneration for the process reported, or an *amyloidähnlich* degeneration, even an unqualified amyloid degeneration, may not be far of the mark.

With this sketchy presentation of some of the views concerning these peculiar changes and the principal contributions to the literature, we may pass on to the writer's personal observations on the two cases coming to autopsy at Westborough State Hospital.

CASE I.

Summary.—A bachelor of 50, formerly a lumberman in Western camps, later a bartender in frontier towns and finally, after considerable roaming about and progressively descending in the economic scale, was dishwasher in a restaurant. He had used alcohol to excess; denied lues, but admitted gonorrhœa and promiscuous sexual indulgence. For the past five years had lost his grip on things and failed in his ability to support himself as well as formerly, yet he thought he was "getting on fine." Shortly before admission he was depressed and gave utterance to certain somatic delusions—heart and pulse had ceased beating, etc. On admission, euphoric, considerable mental dilapidation; characteristic general paretic speech disorder; contracted non-reacting

pupils; unsteady gait, general tremor and jerky tongue. Positive Noguchi in blood serum. During hospital residence, continuously grandiose; marked memory disturbance; repeated epileptiform seizures; loss of rectal and bladder control; terminal lobar pneumonia; death. At autopsy, marked pial opacity, cerebral atrophy, multiple miliary gelatinous areas in cerebral cortex, granular ependymitis; lobar pneumonia; pyelonephritis, cystitis. Microscopically, the classical histopathological lesions of general paresis; numerous homogeneous deposits confined to the mesoblastic apparatus of the cerebral cortex, the marrow seldom involved, while sections from basal ganglia, pons, cerebellum and cord were free.

W. S. H., No. 9455, an unmarried man of 50, was admitted February 27, 1911, on a transfer from Boston State Hospital (Psychopathic), where he had been a patient for four days.

Data of family history is meagre. The patient's parents were born in New Brunswick, dying at an advanced age without having suffered from mental or nervous disease. Mental and nervous diseases were denied for all other known members of the family.

Of the patient's previous history there is also little information. A brother, a fairly intelligent man, stated that when a child patient suffered an injury to the penis, the result of a burn, which explains the mutilating scar seen on the prepuce; that he had no severe illness as a child and in general was much like other boys of his community. As a youth he worked on a farm, doing good service, but on reaching his majority, some thirty years ago, he went to the Western part of the United States; since then he had not been in close touch with his relatives. Out West he worked as a lumberman in many camps and later, for several years, was a bartender in Western towns, moving about frequently. Five years ago he came East to Boston. Since he has lived in Boston he has had several places of employment, how many, neither he nor his brother can state, but each succeeding position has been lower in the economic scale than the preceding, the last as dishwasher in an ordinary city restaurant. He was of the opinion, however, that he was making progress; to use his own words he was "getting on fine." He had used alcohol freely, and judging from the shameless manner in which he related his sexual experiences, had cohabited promiscuously. Gonorrhœa several years ago; lues denied. Early in February, 1911, informant (brother), who had not seen patient for about two years, noted a marked impairment of memory; that he exhibited considerable general mental dilapidation, and, moreover, that he was despondent over the state of his health. At this time he talked a great deal of dying, saying repeatedly that his heart and pulse had stopped beating. February 23, 1911, the patient's relatives, fearing his increasing despondency might lead to some act of self destruction, reported him to the police, whereupon he was

sent to Boston State Hospital and four days later transferred to this hospital (W. S. H.).

In the certificate of commitment there is a statement to the effect that "he has been progressively deteriorating for some time."

The abstract from Boston State Hospital is, in part, as follows:

"Orientation.—Person, impaired. Did not know his age nor could he tell when he was born. *Place*, impaired. Knew this was Boston, but had no idea of suburb or general location of distance. *Time*, impaired. Did not know year; said February 22d, Wednesday. (Really Thursday, 23d.)

"Grasp.—Surroundings, impaired. Called this a hospital, but did not know name. Thought it was for good people. Knew position of physician, but did not of nurse. *Education*, impaired. Was able to read and write 7×8 he was unable to calculate, nor could he do any but the simplest calculation, such as 2×3 . In naming five cities, said St. John's, Michigan, Missouri, New Orleans, Kentucky. Could not tell who was present king of England or president of this country.

"Memory.—Remote, impaired. After leaving school, stated he worked twenty years as farmer. Then he went West, being there thirty-five years as a sawyer of lumber and saloon keeper. Cannot give any details. . . . *Recent*, impaired. Thought he came here this morning. Does not remember seeing physician before, when he came this afternoon and had only recently seen the examiner. He cannot give the details of how he happened to get here.

"Hallucinations.—Denied and no evidence of any.

"Delusions.—He expresses a feeling of well being; said he was never as happy in his life; was going out to-day to work, filling a position he had recently obtained; that he was one of the best sawyers that ever was and the first to use a certain kind of saw. Thought he would like to learn how to run an automobile.

"Emotional Tone.—One of elation.

"Flow of Thought.—Nothing particular, excepting inclination to go into unnecessary detail about unimportant matters.

"Motor Phenomena.—Facial expression was one of elation. Quiet and remained in bed without trouble.

"Physical Examination.—Contracted, non-reacting, irregularly outlined pupils; right smaller; marked speech impairment; tremors of tongue and hands; absent knee-jerks; swaying in Romberg, tremors in writing.

"Provisional Diagnosis.—General paresis."

Herc.—On admission, in addition to the physical disorders noted above, ankylosis of distal articulation of right ring finger, hallux valgus (left); mutilation of prepuce from an ancient injury; recent scratch on right side of neck three inches in length; soft systolic murmur heard at apex; pulse rapid and full; firm radials; other trunk findings negative. Reads No. 2.5 D test type with right eye, No. 2 D with left. Argyl-Robertson pupil, arci seniles. Hearing tests not satisfactory—patient not co-operating. Impairment of ability to differentiate certain common odors; hypo-

geusia; diminished pain sense of skin. Unsteadiness of gait, heels planted first and with force; co-ordination movements poorly executed; muscular development good; tone fair; tremor of closed eye-lids and coarse tremors of hands; patellar reflexes absent; no clonus; doubtful Babinski on each side. Speech was slow and drawling, with elision of syllables and frequent clonic repetitions of the last syllable of words. The handwriting was progressively ataxic, with syllables or words left out.

He was imperfectly oriented; thought he was in a New York hospital, but did not know what kind of a hospital. It did not disturb him to be told that he was a patient in an institution for the insane, to which he replied, "I was never better in my life. I am well mentally and physically." He was unable to give an account of the happenings in his life during the past few weeks, and the statements which he made concerning the remote past were very conflicting. He first said that he was 47 years old; later that he was 28; that he went to college for five years, entering when he was ten and leaving when twenty, but he could not give the name of the college. He was unable to perform the simplest examples in arithmetic, and his knowledge of the commonest known historical events was very defective. He talked freely of his great abilities: "I expect to make a million dollars, as I am well and hearty, I am going into the restaurant business. I have got \$5000 ahead in the Boston Bank of South Boston. It is drawing four cents a week on each dollar," etc. Notwithstanding his claims as a man "full of mental and physical possibilities," he could realize no inconsistency in this with his last employment, dishwashing. He minimized his alcoholic indulgences, said he used tobacco moderately and though he admitted gonorrhœa, he had not contracted syphilis, because he made it a point to cohabit only with married women, entering into many disgusting details. Throughout the interview he exhibited considerable elation and a marked sense of well-being.

March 28, 1911. During the past month he occasionally protested against remaining here, but generally he seemed well satisfied with his surroundings. Memory defect was the most marked mental symptom. Almost daily he made the same requests and told the same stories as though they were new. He never could tell how long here, nor give the name of his physician, the attendant or of patients with whom he conversed frequently. To-day he complained of a sensation of coldness in the right half of his body.

April 17, 1911. He was still disoriented and exhibited just as poor memory as previously noted. Though apparently duller, he insisted that he was not insane and could see no reason why he should remain here. He said he had \$4000 in bank which brought him in five cents, evidently meaning five per cent, but when his attention was called to the statement he apparently could not comprehend the difference between a deposit of \$4000 which yielded five cents and one of like sum that yielded five per cent. He had not the slightest idea of current events. Speech defect was more pronounced than at previous interviews; test phrase more poorly executed. During the last twenty-four hours he has developed an attack of diarrhœa.

May 27, 1911. Since the last note patient has been confined almost constantly to bed, having become very unsteady on his feet and grown worse, mentally and physically. At present he is very dull, says little, not even responding to greeting of physician. He has lost in weight.

July 7, 1911. Following the last note he was less dull and seemed stronger and was again permitted to be up and dressed. He was again euphoric, discussing freely his prowess and expectations. He usually replied to the physicians' greetings with, "Feeling fine. Get three good meals a day; nice bed to sleep in."

July 14, 1911. To-day very untidy and confused; mumbles almost constantly in an unintelligible manner and attacked the attendant without apparent provocation.

August 22, 1911. In bed; very feeble; apparently clouded; speech content rarely intelligible, mutters a great deal to himself.

September 21, 1911. Very noisy, shouts and screams at the top of his voice; throws his arms wildly about and beats himself on the head, particularly the face.

September 25, 1911. A ballanitis has developed, for which surgical interference is necessary.

September 29, 1911. Again noisy as on the twenty-first of the month; leaves bed, carrying along the bed clothing, meanwhile much confused; very tottery and falls frequently when he attempts to run around the ward.

October 4, 1911. In two attempts to leave the bed he was so weak that he fell, each time producing severe bruises.

October 22, 1911. Epileptiform seizure.

November 3, 1911. The patient has failed very appreciably since last note and is now constantly untidy.

November 30, 1911. Within the last twenty-four hours he developed a severe series of epileptiform convulsions; twenty-three distinct attacks have occurred during this period.

December 25, 1911. During the past three weeks numerous epileptiform seizures have occurred. Failure has been rapidly progressive. He has been unconscious most of the time.

December 28, 1911. To-day temperature dropped to 94.2 F. (rectal); previously it had been 102.6 F. Respirations are now fifty-two per minute; bubbling râles may be heard rather generally over the lungs and there is dullness of the left lower lobe and in the region of the left axilli. Death at 10.55 p. m. Autopsy fifteen hours post mortem.

Anatomical Diagnosis.—General paresis. Increased density of calvarium, dural congestion, chronic leptomeningitis, hydrocephalus ex vacuo, cerebral atrophy, multiple miliary gelatinous areas in cerebral cortex, moderate cerebral arteriosclerosis, granular ependymitis; congestion and chronic leptomeningitis of cord; lobar pneumonia; hepatic congestion; pancreatic congestion; splenic congestion; pyelonephritis, cystitis.

Abstract of Autopsy Protocol.—The dura is congested and tense, presenting along either side of the longitudinal fissure, at the vertex, herniæ of

Pacchionian granulations. The whole brain is congested, the pial vessels markedly engorged. The pia, besides, is very opaque and edematous. Here and there over each convexity of the cerebrum are cyst-like accumulations of fluid in the pia which have compressed the underlying gyri. Some of these areas in their greatest extent exceed the diameter of a fifty-cent piece. The pial opacity is distributed over the entire convexity, with exception of the tips of the occipital lobes, which remain relatively clear, over the mesial surfaces of the frontal lobe, the base of the cerebrum and inferior surface of pons, the base of the cerebellum and over the superior worm. The opacity is most pronounced over the frontal convexity and mesial surfaces of the frontal lobes which are welded together. The cerebral gyri exhibit some wasting, particularly those of the frontal lobes, where there is considerable gaping of sulci, and also the central convolutions, particularly their upper two-thirds. Section reveals in cortex of frontal, parietal, occipital and temporal gyri innumerable small, grayish gelatinous masses which look not unlike boiled sago, though considerably smaller, the largest scarcely exceeding in diameter that of a pin-head. Some of the granules are apparently confluent, but by far the great majority are discrete. No such alterations are found in the basal ganglia, mid-brain, pons, medulla or spinal cord. . . . The brain with pia attached and before section weighs 1360 gm.; the skull capacity after the method of Rosanoff and Wiseman is 1620 cc.

The other gross findings noted in the anatomical diagnosis offer no special features that need to be gone into here. It might be noted, however, that nowhere in the trunk organs were gross lesions encountered which were in anyway comparable to the deposits found in the cerebral cortex. It may be added, also, that the subsequent microscopical examination of the trunk organs revealed no changes suggestive in the least of an amyloid degeneration.

Microscopic Examination.—For the reason just stated, the microscopical report is limited to the central nervous system. The typical histopathological changes of general paresis—perivascular infiltration with plasma cells, lymphocytes and other foreign cells heavily laden with lipoid granules in the pia and cortex, cortical vascular proliferation of the reticular and aggregative types, numerous rod cells, luxuriant fibrillary and cellular gliosis, destruction of ganglion cells with consequent disturbance in the cortical architecture—were abundantly shown in sections prepared after the Nissl methods and Weigert's glia and elastica stains. In a greater or less degree, these changes were demonstrated by practically all other histological procedures employed in the study of this case. The typical paretic histopathology, however, was frequently overshadowed by rather numerous and extensive homogeneous deposits. The peculiar deposits were likewise exhibited by all of the technical methods, with some methods showing a great affinity for certain dyes, even with those where they failed to take the stain their optical character made them easily the most striking feature of the microscopical field. The deposits were confined almost wholly to the cere-

bral cortex; only in areas where the involvement was the greatest were a few of them encountered in the outer portion of the white substance. Numerous sections made from the basal ganglia, mid-brain, pons, medulla and spinal cord were negative. All cortical laminæ were indiscriminately affected (Fig. 1), and while generally the outer half of the gray matter contained a richer deposit, sometimes the inner half displayed the greater involvement. The mesoblastic apparatus seems to be the seat of the process, particularly the smaller vessels. In a given vessel, the deposit sometimes extended throughout all of the tunics, producing an enormous thickening of the wall and in many instances occlusion of the lumen. In those specimens where the deposits failed to take the stain, as for example Nissl sections, the affected vessel walls were of a glassy or waxy appearance, the smaller vessels looking not unlike urinary casts. Fig. 16, from Case II, serves equally well to portray the alterations in many of the smaller vessels of this case. This conversion of the vessel wall into a homogeneous substance does not take place simultaneously in all of the tunics, for frequently along with massive deposits one finds small discrete globules or groups of globules on the verge of coalescence. (Fig. 2.) Many vessels were observed in which the process was confined to a single tunic, but in such instances it was always the adventitia or media, examples of which are illustrated in Figs. 3 and 4. In Fig. 3, a vessel found just beneath the gray matter at the bottom of a sulcus, the media is shown thickened and converted into a homogeneous mass, while the adventitia and endothelium remain relatively, if not absolutely, intact. In Fig. 4, a capillary of the molecular layer, it is the adventitia that bears the brunt of the burden. Though this vascular coat is tremendously thickened for so small a vessel, the endothelial cells are still visible and the lumen patent. Vessels so affected may go on to obliteration of the lumen and still show endothelial cells grouped about the center or nearer the periphery of the mass, depending upon whether or not the process in the vessel wall has been concentric or eccentric in its development. Finally, even endothelial cells disappear and the result as seen in section is a circular or irregular mass which may give the impression of a deposit laid down outside of the vessel wall. In Fig. 5, capillaries involved by fairly large deposits but showing their endothelium preserved, a small vessel in which the process developed eccentrically, a small occluded vessel and a comparatively large vessel presenting the typical perivascular infiltration of general paresis at the top and left of which a large homogeneous mass seems to be flowing around some of the infiltrated cells, are all shown as part of the findings in a single field of an 8 mm. objective.

Always surrounding affected vessels, of whatever stage in the development of the process, a clear space can be made out, a space in excess of that shown around the unaffected vessels. This apparently is not the result solely of shrinkage produced by the various fixatives, but is the dilated perivascular space, brought about, in all probability, by an embarrassment of the lymph flow.

Nowhere, in early or in advanced stages of the process, are homogeneous deposits encountered free in the dilated spaces just mentioned. That the alterations in vessel walls, with their consequent thickening and encroachment on the perivascular lymph channels, offer serious embarrassment to the lymph circulation, the appearance of tissues surrounding blood vessels of the white substance would seem to indicate, particularly in those portions of the marrow where the overlying cortex exhibited the most extensive deposits. Figs. 6 and 7 are typical of many vessels found in the white substance. In Fig. 6, peripheral to the readily visible though dilated and somewhat distorted ordinary perivascular space, is a considerably larger but wide-meshed area, its trabeculae rather coarse fibered, not unlike the disturbances which an edema produces, save for the rather coarse fibers which traverse the lighter zone. In the perivascular space proper there is no cellular infiltration; in the meshed zone the cells shown are amœboid glia cells, large cells containing lipoid granules (probably of mesodermic origin), a few plasma cells and lymphocytes. Fig. 7 exhibits the typical perivascular infiltration of general paresis, peripheral to which is also shown an edema-like area, such as was described for the preceding figure, though containing fewer cells. When vessels so affected are stained by the tannin-silver method of Achucarro,³⁰ sometimes the coarse-fibered mesh described above, is shown to be directly continuous with a coarse net-like proliferation of fibers in the vessel wall. Occasionally in the cortex, perhaps more frequently here than in the white substance, vessels were encountered which exhibited a coarse net-like proliferation of mesodermal fibers with an extension of the net into the surrounding structures, though never in so pronounced a manner as shown in Achucarro's published photographs. (This may in part be due to the fact that our material was not examined by the tannin-silver method until it had been conserved in formalin for about fourteen months. Nevertheless, where shown, this net-like proliferation, or syncytium of connective tissue fibers, extending into surrounding structures and in instances passing over and becoming continuous with similar adventitial proliferations in neighboring vessels, was a convincing demonstration of the type of vascular change to which Snesarew^{31 32} and Achucarro³⁰ have called attention. Figs. 8 and 9. Similar proliferations are also shown by the Bielschowsky method, though of course there is no real differentiation except that offered by the general appearance of the structures. Fig. 10.) In the opinion of the writer, the meshed zonal area surrounding the vessels of the white substance is not an artefact, for it has been found after all of the fixatives employed and in sections made after and without imbedding.

A careful study of those deposits described in the literature as *extravascular*—and indeed as such they appear from a casual inspection of Figs. 2, 5, 11 and 12—leads to the conviction that in the majority of instances they are none other than greatly altered vessels, the larger masses representing enormously thickened vascular walls which have obliterated the lumina, or contiguous vessels which have coalesced. The smaller masses are con-

ceived as fine calibered vessels whose lumina are obliterated, isolated globules or group of globules in the walls of otherwise invisible vessels and, perhaps, isolated globules in the meshes of the net-like proliferation of the adventitia which certain tannin-silver preparations strongly suggest and also indicated in Bielschowsky sections. Fig. 13. So if this latter be true (deposits in the net-like proliferation of the adventitia) then it is seen that the peculiar process involves only mesoblastic structures.

In Fig. 11, a vessel is shown cut longitudinally and on either side of it rather large, irregular shaped, homogeneous masses. Such pictures suggest the *relative-aggregative* type of vessel proliferation described by Cerletti.²⁸ The deposits shown in Fig. 11, the writer believes, represent smaller vessels given off from the larger unaffected arterial twig which having undergone this homogenous change and in consequence of the shrinkage resulting from destruction of intervacular nervous elements have been brought closer together. This interpretation is not invalidated by the absence of deposits in the larger vessel which is looked upon as the main branch of this particular system, for as pointed out above—and a glance at almost any of the illustrations would show—the smallest vessels are the favored seat of these changes. Again, in Fig. 12, an aggregative type of vessel proliferation is conceivable, but here one thinks of Cerletti's *absolute-aggregative* type. (Figs. 11 and 12 were photographed under exactly the same magnification; Fig. 11, frozen section of material fixed in Weigert's glia mordant, without previous formalin, and colored with Van Gieson's stain, while Fig. 12 is from a frozen section after formalin fixation, the section treated with alcohol for a few minutes and afterwards stained with Weigert's elastica stain. This latter method and the Bielschowsky silver impregnation process usually displayed the greatest number of deposits). The type of deposits which on casual inspection appears extravascular is far more numerous than the instances which offer no question as to vessel involvement.

In well-differentiated Nissl specimens the deposits are shown as glistening homogeneous masses and in those specimens sectioned without imbedding there are relatively large, clear spaces, the result of a dropping out of the homogeneous masses in the process of handling. With hæmatoxylin, such as employed in Alzheimer's method IV, or other hæmatoxylin solutions, the deposits are also glassy in appearance, while the Van Gieson method stains them in varying nuances of a dark, dull red—a brick red—never the brilliant red which connective tissue fibers of mesodermal origin take on with this stain, and makes them sufficiently distinctive so as not in anyway to be confused with glial structures. Even where the process is not sharply delimited in the wall of a given vessel, this difference in color permits a clear differentiation of the affected from the non-affected parts. (It might be noted here that material fixed in Weigert's glia mordant, sectioned without imbedding—frozen sections—and stained after the Van Gieson method yields very brilliant results, offering an excellent differentiation of the various cellular and fibrillary elements which are superior to

the results obtained by the usual application of this method.) Carmine solutions stain the deposits a dull light red and Rosin's method a flesh-pink, but none of these yield quite as many deposits as Weigert's elastica stain (applied as noted above) or the Bielschowsky silver aldehyde method, the former staining them a grayish purple to a deep royal purple, the latter in varying sepia tones to an almost pure black. The Levaditi silver impregnation method imparts a brownish yellow color to the homogeneous deposits, while Achucarro's tannin-silver produces a reddish brown color, brownish black, or black. Iodine green stains by far the great majority of the deposits a light green like most of the surrounding structures. One sees here and there, however, a mass stained a dark green and some of these latter exhibit the faintest suspicion of an amethyst or purple color tone. With methyl violet on frozen sections from formalin material the deposits, as a rule, strike a light red or pink color; some, however, are purple like the surrounding structures, while iodine solutions stain them yellow mostly, like the surrounding elements, but some of the masses are stained brown, though never a very deep brown. With sections treated from five to ten minutes with slightly acid aqueous solutions before applying the iodine, one more frequently obtained brown staining. Strong sulphuric acid being added, intensified the staining, but scarcely to the point of the classical "dark mahogany color."

Frozen sections of formalin material boiled in water, or in a strongly alkaline aqueous solution (40% NaOH), were not affected in the least, so far as concerns the deposits, for after boiling and washing rapidly in water, they showed on staining with the picric-acid fuchsin mixture a great profusion of the homogeneous masses, even to the very smallest deposits. Long continued action of a concentrated acid (H_2SO_4) did not produce a solution of the deposits, but rendered them more difficult to stain with acid fuchsin solutions and intensified the browning which some of the deposits exhibited when iodine solutions were applied.

The absence of any marked cellular or fibrillary gliosis about the deposits was particularly noticeable. To be sure, large glia cells and coarse-fibered proliferation were shown (Weigert's glia stain) about many of the vessels affected by the process, but these were not inconsistent with the glial changes of general paresis. Sometimes, where smaller deposits were grouped, coarse glia fibers could be seen threading their way through the colony and near by one or several large glia cells, but such instances were rare. Among such groups of the smaller masses, when the tannin-silver method was employed, one found occasionally a rather net-like arrangement of dark fibers (connective tissue fibers) within the meshes of which some of the deposits lay. These black fibers were well differentiated from another type of fiber sometimes seen within the groups, the brownish fibers of glial origin. In Bielschowsky sections showing fibrous adventitial nets the deposits were displayed within the meshes of the net. Fig. 13.

No ganglion cell or nerve fiber was shown which exhibited homogeneous alterations suggestive of the alterations in vessel walls. The ganglion cell

changes observed in general paresis, of which there is an abundant literature, were practically all shown and need not be detailed here.

Finally, blocks from the frontal, central, superior parietal and calcarine areas and from the basal ganglia and spinal cord prepared after the Levaditi method proved negative for *treponema pallidum*.

Epicrisis.—The clinical record and anatomical findings leave little doubt as to general paresis in this case. The numerous homogeneous deposits within the mesoblastic apparatus were the most interesting of the structural changes and have given the impetus for the report of the case. The process is not a common one, though Liebmann³⁴ in an early communication maintained that it was a frequent accompaniment of general paresis, a contention not corroborated by those who have had a large experience with autopsies on this class of subjects. Indeed, since the publication of the two cases of Alzheimer in 1896, the two cases reported in 1911 and 1912, one by Mignot and Marchand and the other by Sioli, are the only instances known to the writer where the process has been recorded as present to any great degree. The alterations, then, are sufficiently rare to give a special interest to those cases in which they occur. The various interpretations which have been set forth, in the light of our increased knowledge of brain histopathology, may be now subjected to more critical analysis and, perhaps, a clearer conception of the whole process may be gained.

As to these deposits, the question uppermost is what relation do they bear to the general paretic process, or, if you will, to the underlying syphilitic infection? More and more we are recognizing a variability in the anatomical expression of lues equalling almost its numerous clinical manifestations, facts which merit scarcely more than a mere mention. In view of Noguchi's and Moore's³⁵ recent discovery, we must class general paresis not as the perfect paradigm of a metaluetic process, but rather as one of the manifestations of an active syphilitic process which not only as the treponema indicates, but, as pointed out by these observers, is also indicated in the commonly present Wassermann reaction. Amyloid degeneration of trunk organs as associated with the infectious granulomata is not an extraordinarily rare finding at autopsy, though more common in the material from a general hospital than among the autopsies on the insane. That similar deposits did not occur in the trunk organs is interesting, but points,

perhaps, to the fact that the infection played itself out largely in the central nervous system. In a way, then, the deposits described above may be looked upon as one of the many structural changes which accompany or result from a syphilitic infection, to be sure while not as common as some other changes may occur as frequently, let us say, as some of the rarer endothelial alterations of small cortical vessels described by Nissl.³⁵ The characteristic microchemical reaction of amyloid, however, was certainly lacking in by far the great majority of the deposits, and yet the manner in which some of them responded to iodine solutions and iodine green was at least suggestive of a transitional stage of amyloid. Moreover, the richer deposits which some methods showed over others, with material from areas not over a few millimeters apart and sometimes from the same block, together with certain differential staining of the deposits in almost any given section would indicate a difference in their finer chemical composition. Bearing in mind what was mentioned above, as to amyloid substances being albuminous unions of high molecular valence, one may interpret the deposits in this case as a sort of pre-stage of amyloid.*

The more detailed study of the homogeneous masses in this case does not lead one to look upon them as degenerations in the common acceptation of the term as applied to fixed cells or even to proliferated cells originating in the vicinity or coming from a distance, in so far as cells of epiblastic origin are concerned. In the hundreds of sections examined, not a single cell or fiber of the glia or nervous apparatus exhibited the slightest suggestion of a deposit comparable to the alterations shown in vessel walls. The origin of the deposits, therefore, must be sought in the mesoblastic apparatus and its circulating fluids. To consider these homogeneous masses as resulting from albuminous precipitates from the blood plasma or lymph is not wholly speculative; it is at least worthy of consideration. Always, as shown by the illustrations, it is mesodermal fibers that undergo this homogeneous conversion and the more or less round, small, light areas sometimes seen in the deposits (for example Fig. 6) may be residuals of mesoblastic cells

* Concerning the vast literature of the origin of amyloid no review can be undertaken here. The reader is referred to the recent paper by Stürmer³⁶ on corpora amylacea and to Weigert's³⁶ critique on coagulation necrosis and its relation to hyaline formation.

in the perivascular infiltration and proliferated cells of the vessel walls. As an interpretation of the zonal disturbance about the vessels of the white substance as illustrated in Figs. 6, 7, and 9, the writer conceives nothing more satisfactory than to look upon it as the result of a lymph transudation seeking a point of least resistance, or perhaps a simple dilatation of the perivascular space, its natural course being impeded by the enormous deposits in the vessels of the overlying cortex.

A feature which the study of this case brings out is the existence of many more blood vessels of smaller caliber than were supposed to be present in the brain, assuming of course that the submitted interpretation of the so-called extravascular deposits (*vide* Microscopical Examination) is correct. Cerletti,³³ in his recent monograph on vessel proliferation, has called attention in rather convincing manner to what we have been in the habit of considering as vascular proliferations in certain chronic wasting diseases of the brain as no actual increase in vessels but only vessels which have always existed, now occupying a smaller area as the result of the destruction of intervascular elements. Even in certain acute processes he has shown that many vessels are brought to light by alterations in their walls which otherwise would have escaped notice by present technical procedures. The findings in this case, the writer believes, substantiate the views of Cerletti as to relative vessel proliferation. If those at first sight, seemingly-extravascular deposits, are not residuals of vessels, or deposits within the proliferated net-like extensions of the adventitia, then their presence is difficult to explain. As to deposits within the proliferated extensions of the adventitia, Fig. 13 seems to give conclusive evidence.

CASE II.

Summary.—A woman of 26, with history of hysterical behavior and unconventional social conduct, when 24 and during a period of stress as result of family misfortune and financial stringency, had a convulsive seizure—right hemiplegia supervening, but lasting only a few hours. Six months later, sudden loss of consciousness with convulsions and frothing at the mouth, for several days thereafter much confused mentally. Then followed a period of considerable sexual hyperæsthesia and after about four months

apparent apoplectic insult with right hemiplegia and motor (!) aphasia for four days. Marked mental dilapidation ensued. Three months later another apparent apoplectic insult, also followed by loss of motor power in right lower extremity with partial restoration later, but general physical weakness and mental deterioration progressed; she was depressed and hallucinated. In hospital, more or less permanent aphasic disorder, for the greater part of the time untidy and mentally confused. Sudden development of motor weakness in right leg and right arm with wrist drop and pseudo-athetoid movements of right hand, lasting over a month, and then almost as suddenly restitution of power and normal manipulations of hand. Cutaneous pain sense persistently diminished; Noguchi blood serum test positive. Finally, a wild delirium; lobar pneumonia; death. At autopsy, gross lesions of general paresis, no coarse focal lesions of brain. Microscopically, typical histopathology of general paresis, lesions indistinguishable from active cerebral lues and focalized amyloid changes of vessels in right calcarine area.

W. S. H., No. 10058, a woman of 26, was admitted March 30, 1911, with a history of mental disorder of five months duration, though it is likely, judging from the anamnesis, the disturbance had existed for a longer period. This was her first admission to a hospital of this character.

Family History (as given by husband).—Father and mother are living and in good health, the former 70, the latter 55 years of age. Three sisters and two brothers are living and well. A third brother is a heavy drinker. A fourth brother was formerly at the Waverly School for Feeble-minded (Mass.). He is said to have had an accident when a small child, following which he developed epileptic convulsions. He has since died. One of the sisters is a wayward girl, having given birth to an illegitimate child when fourteen.

Previous History.—(There were two sources of information regarding the past history of patient—each more or less hostile to the other—a sister and the husband. The sister claimed that the husband was only a common law husband, and that his ill-treatment was mainly responsible for patient's present condition, while the husband maintained that family interference and constant nagging of relatives had brought about her predicament. So that many statements from each of these sources had to be taken *cum grano salis*.)

As given by sister: Up to patient's fifteenth year nothing out of the ordinary run of a young girl's life is reported. When she was fifteen, she ran away with a youth of about her own age and was married to him, but the union was not a happy one and two years later she secured a divorce

on the ground of non-support. She then went to live in Boston, having previously lived in a small New England town, supporting herself as a waitress. This she did for two years, when in the course of her duties she met the present husband, with whom she has lived ever since, but was never formally married to him. It is claimed that the man failed to support her properly; that she was obliged frequently to do outside work, working in a laundry and at other forms of hard labor to obtain the necessities of life. Of hardships with her husband she said nothing to her family until the summer of 1911, when she was on a visit to her people. At that time, the sister states, she appeared much run-down physically and mentally, she was discouraged and very unhappy. She refused, however, to leave her husband and make her home with her parents as they had requested. During the visit home, while out in the garden one day, she had some sort of seizure, she fell unconscious to the ground and was convulsed. The sister did not remember whether or not the convulsions were of a general nature, but said that patient frothed at the mouth and that for two days following she was very much confused. Shortly afterwards she returned to her home in Cambridge and is said to have had a violent quarrel with her husband and his relatives, but she did not leave him. In January, 1912, she was still weak and in consequence could not aid in support of the household as formerly, but she received little sympathy from her husband. It is said the husband was jealous and abusive of her. Soon after the episode in January she made several attempts to leave her husband, in fact actually left his roof, but each time returned voluntarily.

As given by the husband, the previous history reads something as follows: Since husband has known patient she has always been "excitable, strong tempered and very impatient," especially "when not allowed her own way," easily becoming "hysterical," yet withal readily calmed when reasoned with. Save for a rather obstinate constipation, her health, on the whole, had been good. For about a year, 1907-1908, she increased rapidly in weight, weighing 180 lbs., whereas her normal weight was about 130 lbs., but was not as well as formerly. This was due, the husband believed, to an inactive mode of living and to constipation which was most severe during that period. After 1908 she was much more active, lived in Panama for six months, rode horseback considerably and adopted a diet containing much raw fruit, with resulting loss in weight and general improvement in health. For two years she was in good health. During the latter part of 1910 she was impelled from family considerations to take into her home a younger sister, who at the age of fourteen was about to give birth to an illegitimate child. The sister's misfortune was a source of much worry to her and this, coupled with her husband's financial affairs, which made it difficult for them to pay their bills with regularity, seemed to completely overwhelm her. At this time (December 10, 1910,) she is said to have had "a very slight attack of paralysis, which lasted only a few hours." In October, 1911, one day while the husband was away from home, she had some sort of fit, called, it is said, by the attending physician "an attack of

epilepsy," and that this was followed by a paralysis of the right half of the body and a marked impairment of speech. (From the rather poor description given, the speech defect was probably a motor disorder.) The paralysis and the speech disturbance lasted in full force for three or four days and then gradually improved, but the improvement in speech lagged behind the restoration of motor power. Even after the improvement in speech and paralysis she was more or less forgetful and generally indifferent. On the date of the last-mentioned attack she had been sorely disappointed in having to forego attendance at the Brockton Fair. In January, 1912, she had another fit, also followed by right hemiplegia, which lasted about three days. This attack supervened a long automobile ride which had been not only fatiguing, but also depressing, in that while at her mother's home to which they had driven she had been much commiserated, the mother and a sister expressing their fears to her that she (patient) was "going into decline." For several weeks prior to this last attack she had exhibited considerable sexual hyperæsthesia but now this abated; her memory was worse and she failed progressively. At this time, because of her husband's business (insurance agent) and without a maid and other companionship, she had to be left alone most of the daytime. She then began to seek companionship by visiting the neighbors in the apartment house where she lived to whom she was not welcome and on such visits managed to get into several quarrels. All of this contributed to make her condition worse. Finally, for several weeks at a time she would not leave her bed, refused to have the bed linen changed, would not eat, claimed she could hear her mother who lived at a distance talking to her; lost in weight, became depressed and said she would not live.

Here.—On admission a young woman of slender build, though well proportioned and relatively well nourished, presented the appearance of considerable personal neglect. As she met the receiving physician she seemed perplexed and apprehensive and was rather resistive. She refused to walk to the ward and had to be wheeled. The character of the gait on entrance, therefore, could not be determined, but a later observation did not show any special alteration, save perhaps an extreme care in taking each step, a certain lack of surefootedness.

The heart's action was of good force and normal tempo, no murmurs, blood pressure 119 mm. Hg. Nares obstructed; high arched palate; respirations vesicular; no râles; no dullness. The tongue was heavily coated, the buccal cavity dry; examination of abdominal viscera revealed no pathological conditions. The breasts were pendulous; the skin in fair condition, save for numerous small abrasions on face, the result of constant picking, numerous small, dark moles on torso and vaccination scars on arms; dermatographia.

The pupils were widely dilated and reacted sluggishly to light and accommodation; hearing in right ear apparently normal, in left ear greatly impaired. Tests for taste and smell integrity or impairment gave doubtful results. She did not react to rather deep pin pricks of the skin, even over

the nipple areas. The soles of the feet, however, were very sensitive to stroking. She did not co-operate in tests for the discrimination of cold and warm stimuli; swaying in Romberg. All tendon reflexes elicited; no Babinski; no Oppenheim; tremor and jerkiness of tongue; coarse tremor of outstretched fingers; co-ordination movements poorly executed.

She smiled almost constantly and this, with the widely dilated pupils, gave a rather animated facial expression. She smacked her lips frequently as though there were something in her mouth which she relished. To most questions she replied, "I don't know," or, "Not acquainted," and these expressions she uttered rather indistinctly. Other replies were frequently wholly unintelligible. She understood simple requests and usually complied with them, such as, put out your tongue, hold out your hands, spread the fingers, etc. She gave correctly her own name, the name of her husband and her home address. To all other questions as to orientation and for determination of the possible existence of hallucinations or delusions, she replied as noted above, "I don't know," "not acquainted." She permitted her tongue to be repeatedly pricked with a pin without showing the slightest objection or the least discomfort. She exhibited a sense of modesty in that she took great pains not to expose any part of her person save when requested to do so for an examination. In general she appeared to comprehend what was said to her, despite the character of her replies. Spontaneous speech utterances were few and reactive sentences were usually short and generally paraphasic or altogether unintelligible.

April 2, 1912. Last night, the third after admission, patient was much disturbed; she was not only noisy, but walked about the ward aimlessly and tried to get into the beds of other patients. A warm pack was given with beneficial results.

April 8, 1912. During the last three days patient has been very quiet; she has been untidy much of the time. She lies in bed with eyelids partially closed, apparently taking no notice of her surroundings. She makes no effort to assist herself. Once since admission she has shown a tendency to resistiveness.

May 7, 1912. During the last month patient's appetite has been poor; she had to be tube-fed sixty-three times in April and four times since the beginning of May. She has lost in weight. She lies in bed with her head beneath the bed clothing. When spoken to she usually smiles in a rather silly manner and either says nothing or mumbles unintelligibly. Moreover, she takes no interest in her surrounding and does not co-operate with examiner, so that orientation, delusions or hallucinations cannot be determined. She does not appear hallucinated.

July 18, 1912. To-day patient began to have convulsive movements of the right extremities, but when sharply spoken to by the nurse the movements ceased suddenly.

July 22, 1912. Constant twitching of muscles of right shoulder and arm, especially of the trapezius. The shoulder is jerked upward and the head downward and to the right. She is conscious, but her replies to questions

are no better than previously noted. The pupils are widely dilated and very sluggish to light. The nurse reports that the twitchings began in the muscles of the lower arm and hand, and that for about half an hour the thumb and index finger moved rapidly. No Babinski; no Oppenheim.

July 24, 1912. The muscular contractions recorded in the last note, particularly those of the right trapezius, continued actively until to-day; now they are barely perceptible.

August 27, 1912. Early in present month she began to reply to questions rather more frequently and in a more orderly manner than formerly, but she was still untidy with bladder and bowel movements. She also ate better for a while, but since the 22d of the month has been tube-fed. To-day in reply to the physician's greeting she said she was "feeling well" and volunteered the remark that her husband was here lately (fact) and added that she preferred to remain at the institution rather than return to her home. After this she would answer no further questions or make any voluntary remark; only smiled in a silly manner.

October 31, 1912. Since September 13th, when she began to eat of her own accord, she has seemed brighter mentally, but her speech content is often paraphasic. To-day the pupils are widely dilated and stiff to light, and there is considerable jerkiness and tremor of the tongue on protrusion. There is also considerable motor weakness of the right arm and hand. The right hand is reflexed at the wrist, while the fingers are extended. With this hand she makes apparently involuntary movements which are athetoid in character. When she attempts to walk the gait is rather tottery and somewhat ataxic (!).

Co-operation in the aphasic examination undertaken was poor, with consequently unsatisfactory results. She appeared, however, to comprehend simple language and complied with simple requests. She made no attempt to carry out more complex tests. Her greatest difficulty seemed an inability to find the proper word or words with which to form her replies.

Q. What is your name?

A. W——. (Correct.)

Q. What is your name?

A. Esther W——. (Patient's first name is Jeannette.)

Q. How old are you?

A. I am (then after a long pause and rather hesitatingly) about 30. Is that good? I guess it's old enough.

Q. How long have you been sick?

A. Not very long.

Q. How long have you been sick?

A. (No answer.)

Etc. No answer to questions to determine orientation of parts of body. Asked to count from 1-100, she got as far as 39, but with great difficulty, giving hesitatingly each number and remarking frequently, "I know just as

well." From 40-50 she had to be prompted several times. She could go no farther. When shown a watch, coin, pencil, keys, scissors, etc., and asked to name them, she invariably replied, "I ought to know." Asked to tell the time of day by the watch, she repeated the question. Asked to repeat the words of the hymn America said, "My Country, 'tis of thee—Sweet lavender," and then made no further attempt.

November 4, 1912. Cutaneous pain sense again tested. She does not react to pin pricks anywhere, even where deep enough to draw blood. The pupils are dilated and still; she failed to co-operate in tests for accommodation. The knee-jerks are exaggerated, right more than left. The condition of the right hand remains as described above. Attempts to straighten the hand seem to cause the patient pain, for she winces and draws it away. The tongue comes out straight, but is tremulous and jerky. She named correctly a bunch of keys and a pencil, but failed to name a watch and several other common objects. Where do you live? W——. (Patient's name.) What is your name? A lowly uttered, unintelligible reply. To all other questions she was silent, only smiled at the questioner. Her facial expression denotes a fair degree of elation. The nurse reports that at times she talks of past events in her life, of her early life and of happenings on the ward during her stay here; that some days she talks better, that is, practically without paraphasia, and also that she frequently gives the impression of wanting to say something but cannot find the proper words to express herself.

November 11, 1912. To-day she straightened her right hand voluntarily the first time since the peculiar wrist drop and pseudoathetoid movements developed and manipulated the hand in a normal manner, though rather falteringly. Since the last note it has been observed that the pupils vary greatly from time to time in their diameter, but all light reaction fail.

January 2, 1913. Following the last note patient began to show some mental improvement: she displayed more interest in her surroundings; became more tidy; even asked to be taken to the toilet and generally complied with requests. The quality of spoken language improved and while she could only occasionally name correctly a series of objects placed before her, spontaneous speech utterances were better. The pseudoathetoid movements of the right hand disappeared and she made some effort to use the hand which she had previously favored. She could grasp rather large objects, take up a piece of bread and feed herself with this hand when anyone stood by; otherwise she fed herself with the left hand.

A week ago she suddenly became wildly excited and acted as though hallucinated. She screamed aloud, threw herself from the bed and attempted to run about the ward, but the weakness of the lower extremities, particularly the right, caused her to fall frequently. She appeared terrified yesterday while in the neutral bath and fainted. After removal an examination of the lungs revealed some moist râles, but no areas of consolidation.

January 3, 1913. A Noguchi test of the blood serum gave a positive re-

action. Patient continues wildly excited, especially when anyone enters her room.

January 8, 1913. Two days ago a temperature of 102 F. (rectal) developed. Examination revealed a consolidation of the right lung. Since the onset of the temperature she has been less excited. The mouth is dry and sordes collect rapidly on the teeth and tongue. Three days ago she repeatedly frequently the word "ray," the only intelligible word uttered since the excitement, and whenever the examiner said the word she smiled. Yesterday she said "dry" and pointed to her mouth. When water was given she seemed very grateful. These two words are the only intelligible utterances since the onset of excitement. She has emaciated. The pulse is weak and rapid and there is difficulty in swallowing.

January 11, 1913. Patient continued to fail and died at 11.50 p. m.

Anatomical Diagnosis.—General paresis. Increased thickness and density of calvarium, dural congestion, pial congestion and opacity with pronounced increase Pacchionian granulations, atrophy of cerebral gyri, granular ependymitis, few atheromatous patches of the larger vessels at the base of cerebrum, no coarse focal lesions save area in right calcarine cortex extending for a distance of approximately 2.5 cm. and involving area of the line of Genarri which is grayish in color, glistening, firmer and more elevated than surrounding structures of the cut surface (amyloid degen, gumma!), congestion and pial opacity of spinal cord; moderate chronic aortitis of ascending aorta; lobar pneumonia; hepatic congestion; splenic congestion; gastritis; pyelo-nephritis, cystitis, uterine congestion, cystic ovaries.

Abstract of Autopsy Protocol.—The calvarium is of variable thickness, measuring through perpendicular portion of frontal bone 1.2 cm., through portions of the parietals and occipital 1 cm., its diploe scant. The dura is normally adherent, congested and bulges laterally. The visceral surface of this membrane is smooth. The pia is congested, edematous and opaque. The opacity is limited largely to the cerebral convexity (frontal and parietal areas), the mesial surfaces of the frontal lobes and the superior surface of the cerebellum. Pacchionian granulations are greatly increased, appearing along middle two-fourths of the longitudinal sinus on each side in one continuous line and extending downward on the convexity at some points for distances of fully 1.5 cm. Over the foot of F_1 and also F_2 (right side) are several small more or less circular areas (3-5 mm.) in diameter, where the pia is considerably thickened, rough and firm. These areas look not unlike Pacchionian granulations. More orally similar areas are found, some of which overlay and extend into the sulci. The cerebral gyri exhibit considerable atrophy which, though diffused throughout the cerebrum, is most pronounced in the frontal regions and generally throughout the left hemisphere. There is accordingly a moderate degree of cerebral asymetry, the right hemisphere being the larger. On the left occipital convexity, a semilunar sulcus (*Affenspalte*) presents and on the right side there is a similar sulcus, but this is interrupted inferiorly by an annectant gyrus.

Otherwise there is no material variation from the usual cerebral configuration. Save for a few small atheromatous patches in the basal artery and middle cerebrals, the blood vessels offer no gross changes. The pons, medulla and cerebellum share in the general atrophic changes. The floor of the fourth ventricle presents a granular appearance, as though sprinkled with sand, and on section of the cerebral hemispheres the ependyma of the lateral ventricles present a similar condition though less marked. The gray matter, rather generally, is thinner than normal and the cut surface is everywhere congested. Coarse focal lesions fail, save in the calcarine cortex of the right hemisphere, where a distinctly noticeable grayish, firm linear area involving the line of Gennari and immediately contiguous portions seen in sections of the upper lip of the fissure in a space not exceeding much more than 2.5 cm. . . .

The brain with pia attached and before section weighs 1040 gm. After section, the right hemispheres weigh 480 gm.; the left 450 gm.; pons, medulla and cerebellum 180 gm. The skull capacity after the method of Rosanoff and Wiseman is 1200 cc. Representative levels of the spinal cord on section reveal no gross tract alterations. . . .

The subject had emaciated greatly and a lobar pneumonia in the gray stage of hepatization, a cystitis and pyelo-nephritis were found, but these need not be detailed. The only other gross finding to which attention would be called was the position of the right hand. This was much as described in the clinical history (*vide supra*), save that while the proximal and middle phalanges were extended, as above, the distal phalanges were slightly flexed, so that the hand had something of the appearance of the so-called "claw hand."

The trunk organs offered no gross or microscopical evidence of amyloid degeneration.

Microscopic Examination.—The microscopical report is limited to the central nervous system, for much the same reason as was given in the report of Case I.

Here, the classical histopathology of general paresis predominated. Nevertheless, certain areas in the occipital cortex—where to be sure paretic lesions are commonly less severe—in the lenticular nuclei and even in the central gyri were less typical of paresis. One encountered a perivascular infiltration, largely or exclusively lymphocytic, and certain endothelial proliferations, usually in small vessels without infiltrative phenomena, which made one think of a "lues-general paresis combination," or a transition of more acute luetic changes into the more chronically coursing paretic histopathology. Attention was arrested immediately by vessels so affected, for the infiltration exceeded by far the most pronounced infiltration of the plasma cell type, and these latter were by no means insignificant while those vessels which exhibited a proliferation of succulent-looking endothelial cells were equally striking. The infiltrative type of lesion was found alike in gray and white substances, while the endothelial proliferative type was exhibited only in the cortex. The pial infiltration, however,

was always sharply delimited from the underlying cortex, even in the small focalized areas of great thickening and opacity noted on the convexity of the frontal lobes.

While none of the areas studied were wholly free from one or more of the typical histopathological features of general paresis, sections from some areas if taken alone would not warrant an anatomical diagnosis of paresis. Yet the case cannot be considered as an example of Lissauer's paralysis, even though certain clinical symptoms previously detailed might suggest such a possibility. In Fig. 14, a twenty μ section from the right calcarine cortex—alcohol fixation, celloidin imbedding, Van Gieson stain—if one disregards for the moment the rather prominent focalized area or apparent vessel proliferation with marked alterations in the vascular tunics, there is little suggestive of paresis. There is certainly no very appreciable stratigraphic disturbance, so common in paresis; no perivascular infiltration visible at this magnification; no "packets" or other evidence of increased vessel proliferation, either side of the previous excluded zone. Yet, in this section, infiltration of small vessels with a few plasma cells, and rod cells can be found with the oil immersion objective. Compare with Fig. 15, a fifteen μ section T₁, left, technical details as in Fig. 14, save for staining with toluidin blue after Nissl, and one has less hesitancy in pronouncing general paresis.

Little, if anything, would be gained by a more detailed description of the parietic changes shown in this case, but before going on with the consideration of more special changes a word should be added of the spinal cord. In the spinal cord there were no system lesions sufficiently pronounced as to be demonstrable as such in myelin sheath preparations, but with the Alzheimer IV and V methods, particularly V, a somewhat richer fiber net work and an increased number of fiber-forming glia cells were shown in the posterior columns and pyramidal tracts. With all methods employed a great number of corpora amylacea were encountered, most numerous in the posterior columns. They exceeded by far the number of such structures so commonly shown in spinal cord sections from elderly subjects.

For the writer, the most interesting of the microscopical findings were the alterations in the walls of vessels found in the short stretch of the calcarine cortex noted in the autopsy protocol, alterations stratigraphically focalized in the area corresponding to Brodmann's *IVc*, *V*, *VIa* and *VIb* laminae. Fig. 14 gives a good representation of the focal character of the process and of the wealth of vessels displayed in the affected area. Whatever the nature of the process may be there is little doubt of its intimate relation to the vascular apparatus and that it is restricted chiefly, if not wholly, thereto. So-called extravascular deposits are not evident at this magnification, as for example in Fig. 1 from Case I. In the section of which Fig. 14 is a photograph (Van Gieson stain, alcohol fixation) the most of these altered vessels are stained a dark dull red, the remainder varying nuances of red, but in well differentiated toluidin specimens, as in Fig. 16 (celloidin removed before staining), they are colorless and highly refractile. (In

poorly differentiated toluidin sections they are stained in all shades from a very deep blue to an azure and if the celloidin is not removed they are always a very dark blue.) Many of the affected vessels seem entirely occluded by the process and in such all tunics seemed to have suffered equally. The deposits are laid down as discrete globules which may be seen in varying sizes in vessels where the process is less advanced. These globules tend to coalesce, but even in the vessels most affected and where there is apparent occlusion, evidence of their independent origin is still shown. (Figs. 17 and 18.) Sometimes a vessel is shown in the wall of which none but very fine globules are displayed, but these fine globules are readily detected and differentiated from other structures by their highly refractile property in toluidin specimens and in sections of the Alzheimer IV method, their great affinity for the fuchsin of the Van Gieson stain, and the blue color with the Alzheimer V. Sections from material fixed in Weigert's glia mordant, cut on the freezing microtome, or after rapid dehydration, paraffin imbedding and then stained after Van Gieson proved most instructive. Fig. 17 is the photograph of a section prepared as last mentioned. To the right a vessel is shown longitudinally in which all sizes of the globules are displayed, while at the left and superiorly are occluded vessels with coarser deposits. By this method, too, affected vessels are shown in the disturbed area which are stained yellow, though such staining is not as common as the dark red and lighter red. With iodine green few vessels show a distinct amethyst color and with iodine solutions an equal number are stained a rich brown. Cellular and fibrillary glia reactions, as Figs. 16 and 17 show, are not especially marked in the vicinity of the affected vessels, though one occasionally sees in a section as pictured in Fig. 18 a large glia cell attempting to inclose a globular deposit which, however, is so near, or a part of a vessel that it is not clear whether or not the presence of this cell has relation to the vessel as a diseased vessel, or is a special reaction to the deposit. With the Levaditi silver impregnation method for *treponema pallidum*, while some of the altered vessels take the silver in varying shades of brown, the greater number preserve their natural color, a glistening waxy appearance. The search for *treponema*, as in Case I, proved negative. Here, however, there was considerable fibrillary glia impregnation, which made the search much more difficult.

Epicrisis.—The clinical record of Case II, if taken in its entirety, might possibly justify a diagnosis of general paresis, especially when one considers how protean this mental disorder may sometimes prove, but it is certainly not a typical history. Among the gross and microscopical alterations, however, parietic lesions predominate and, despite the presence of certain histopathological features to which attention has been called, anatomically therefore there is little warrant for anything else but a diagnosis of general paresis.

In the beginning of the patient's hospital residence hysteria was given some consideration, influenced largely by data obtained from one source of the previous history. Hysteria, however, was soon abandoned for an organic psychosis, a psychosis dependent upon one or more coarse focal lesions, or perhaps a radiating focus, but in either case a lesion of luetic origin. The speech disorder, the right-sided motor weakness, the deformity of the right hand associated with pseudo-athetoid movements, together with the positive Noguchi in the blood serum, had suggested this. The apoplectiform type of seizure with restricted motor residuals, while not unknown in general paresis, is far less common than the seizure of the epileptiform type, with resulting paresis more diffuse in character. The comparative rarity of the former type of seizure was perhaps the main factor in the staff conference decision for either an endothelial type of cerebral lues or a gumma. Indeed, anatomically there was some slight justification for such a view, but evidence for general paresis was greater. Of course, the possibility of a "lues general paresis combination" comes up for consideration, but if general paresis is a luetic and not a metaluetic condition, as at present seems very likely, the changes which this case exhibited would mean simply that we have in the same brain two types of luetic lesions, comparable in a way to the combined inflammatory and non-inflammatory form of cerebral lues described by Nissl.

The vascular alterations in the short stretch of the calcarine area of this case supplement the more extensive alterations found in Case I. Despite the limited area involved, more conclusive evidence of a transitional stage of amyloid degeneration was shown, in that some of the altered vessels gave positive microchemical reactions for amyloid—yellow staining with the Van Gieson procedure, amethyst with iodine green, and dark brown with iodine solutions.

As regards cerebral vascularization, here, too, the question of actual vessel proliferation arises. In view of what was said above with regard to a relative vascular increase and that some vessels are visible by present methods only after certain changes have taken place in their walls, it is possible that the great wealth of vessels displayed in the affected area of Fig. 14 may be more apparent than real, in so far as actual proliferation is concerned.

GENERAL SUMMARY AND CONCLUSIONS.

The process described above has been long known, as the cited references attest. Under different captions, cases exhibiting the self-same process, in varying stages of development, are recorded, and some of these cases are described in detail. One is surprised, therefore, at the assertion of Mignot and Marchand that they believed theirs to be the first case of amyloid degeneration of the brain reported.

Everyone who has familiarized himself with the literature on vascular alterations of the brain knows that the homogeneous changes which the walls of cerebral vessels frequently undergo may be widely distributed and the vessels involved intensively; that differentiating features concerning such changes have been established. All homogeneous alterations of vessel walls are not of the same character, whether as viewed from the standpoint of physical properties, staining reactions or etiological factors. It has not been the object of this paper to show up such well-known facts: rather its purpose has been to determine, on the basis of our present knowledge of brain histopathology and by approved technical methods, just how much one may claim on structural grounds as a reasonable interpretation of these peculiar deposits, in the literature of which cases dying of general paralysis have furnished the greatest number of exemplars.

Two cases of general paralysis of the insane, one with a rather typical clinical course, the other presenting symptoms apparently of focal origin which obscured the clinical diagnosis, showed at autopsy, in addition to the usual gross anatomical changes of paresis, the typical histopathological lesions of the disease. In one case (Case II) there were added certain proliferations of the cells of vessel walls, indistinguishable from histopathological lesions of the endarteritic non-paretic type of cerebral lues. Other alterations present in both cases were certain glistening, grayish or "fish-flesh" appearing, homogeneous deposits, visible to the unaided eye and limited chiefly to the cerebral cortex. In Case I they were small, for the most part discrete, thickly sown in the frontal and parietal areas and found in other portions of the cortex. In Case II this type of alteration was restricted to a portion of the right calcarine area. Here, however, the macroscopic appearance was that of a confluent mass. Microscopically,

the process was shown to have involved the mesoblastic apparatus by the deposition of stuffs in the walls of blood vessels which eventually converted them into structureless masses. Many of the apparently extravascular deposits proved to be only residuals of vessels, the lumina of which had become obliterated, or groups of vessels which had coalesced as the space between them had become annihilated by the encroachments of their respectively thickened walls, while the remainder not so classed could be reasonably interpreted as deposits within the meshes of the adventitial net-like proliferations exhibited by many vessels. Moreover, the process brought to light a richer vascularization than is usually shown in the most pronounced type of the atrophic parietic cortex. The study of this rich vascularization in a general way confirmed the contentions of Cerletti, namely, that what heretofore has been looked upon as actual vessel proliferation in the brain, in the majority of instances, is more apparent than real. The microchemical differences which these deposits exhibited led one to conclude that, despite the wide distribution in Case I and the extent to which surrounding structures had been compromised, the process was still in a stage of devolution, with an amyloid degeneration as the goal. The tannin-silver method in demonstrating the connective tissue invasion of nervous structures by a net-like extension of the proliferated adventitia of blood vessels added not only confirmation of the previous observations of Snessarew and Achucarro, but furnished the final link in the chain of evidence that in these two cases the process played itself out in the mesoblastic apparatus.

REFERENCES.

1. Mignot, R. and Marchland, L.: Mode de développement de la dégénérescence amyloïde dans le cerveau. *Compt. rendu de la Soc. Biol. de Paris*, Tom I, pp. 989-991. 1911.
2. ——— Paralyse générale avec dégénérescence amyloïde du cerveau et syndrome pseudo-bulbaire. *L'Encéphale*, Vol. VII, p. 497. 1912.
3. Sioli, F.: Ueber amyloidähnliche Degeneration im Gehirn. *Zeitschr. f. d. g. Neurol. u. Psych.*, Bd. 12, pp. 447-464. 1912.
4. Billroth, T.: Ueber eine eigenthümliche gelatinöse Degeneration der Kleinhirnrinde, nebst einigen Bemerkungen der Gefässerkrankungen zur chronischen Encephalitis. *Archiv der Heilkunde*, Bd. 3, pp. 47-62. 1862.

5. Eppinger, H.: Mittheilungen aus dem pathologisch-anatomischen Institut zu Prag. 3. Eigenthümliche Sklerose der Hirngefäße. Vierteljahrsschr. f. d. prakt. Heilkunde, pp. 50-68. 1875.
6. Arndt, R.: Eine eigenthümliche Entartung der Hirngefäße. Virchows Archiv, Bd. 41, pp. 461-469. 1867.
7. Holschwenikoff: Ueber hyaline Degeneration der Hirngefäße. Virchows Archiv, Bd. 112, pp. 552-568. 1888.
8. Alzheimer, A.: Die Colloidentartung des Gehirns. Archiv f. Psych., Bd. 30, pp. 18-51. 1898.
9. Wedl, C.: Histologische Untersuchungen über Hirntheile dreier Salzburger Idioten. Wiener med. Jahrbücher, 19 Jahrgang, pp. 139-142. 1863.
10. Maier, R.: Pathologisch-anatomische Notizen. Festschr. Freiburg i. Br., 1867. Cited by Alzheimer 8.
11. Vorster: Ein Fall isolierter Hyalinbildung im Stirnhirn. Allgem. Zeitschr. f. Psych., Bd. 52, p. 1138, Abstract. 1896.
12. Wassilieff, N.: Ueber die Veränderungen des Gehirns und der Herzganglien bei der Lyssa. Centralbl. f. d. med. Wiss., 14 Jahrgang, pp. 625-627. 1876.
13. Benedikt: Cited by Holschwenikoff 7.
14. Kolessnikoff, N.: Pathologische Veränderungen im Nervensystem bei der Wuthkrankheit. Centralbl. f. d. med. Wiss. 13 Jahrgang, pp. 853-654. 1875.
15. Spiller, W. G.: Amyloid, Colloid, Hyaloid and Granular Bodies in the Central Nervous System. N. Y. Med. Jour., Vol. LXVIII, pp. 217-219. 1898.
16. Neelsen, F.: Ueber eine eigenthümliche Degeneration der Hirncapillaren. Archiv d. Heilkunde, Bd. 17, pp. 119-133. 1876.
17. v. Recklinghausen: Allgem. Pathologie Bd. II. Stuttgart. 1883.
18. Schüle, H.: Sectionsergebnisse bei Geisteskranken nebst Krankheitsgeschichten und Epikrisen, p. 192. Leipzig. 1874.
19. Magnan, M.: De la dégénérescence du cerveau dans la paralysie générale. Arch de physiologie norm. et pathologique. Tom II, pp. 251-262. 1869.
20. Adler: Ueber einige pathologische Veränderungen im Gehirne Geisteskranker. Archiv. f. Psych., Bd. 5, pp. 346-378. 1875.
21. Oeller, J. N.: Ueber hyaline Gefäßdegeneration als Ursache einer Amblyopia Santurnina. Virchows Archiv, Bd. 86, pp. 329-359. 1881.
22. Lubimoff, A.: Beiträge zur pathologischen Anatomie der allgemeinen progressiven Paralyse und Mittheilungen über eine besondere colloidartige Degeneration der Hirngefäße. Archiv f. Psych., Bd. 4, pp. 579-599. 1873.
23. Stilling, B.: Neue Untersuchungen über den Bau des Rückenmarkes, p. 47. Cassel. 1859.
24. Beadles, C. F.: A Telangiectasis of the Left Frontal Lobe, with Epileptiform Convulsions. Mott's Archives of Neurol., Vol. I, pp. 440-452. 1899.

25. Witte, F.: Ueber eine eigenartige herdförmige Gefässerkrankung bei Dementia paralytica. Zeitschr. f. d. g. Neurol. u. Psych., Bd. 2, pp. 675-682. 1910.
26. Lafora, G. R.: Ueber das Vorkommen amyloider Körperchen in Innern der Ganglienzellen; zugleich ein Beitrag zum Studium der amyloiden Substanz in Nervensystem. Virchows Archiv, Bd. 205, pp. 295-303. 1911. See also, On the Presence of Amyloid Bodies in the Protoplasm of the Ganglion Cells; a Contribution to the Study of the Amyloid Substance in the Nervous System. Bull. No. 3, Govt. Hospital for Insane. Washington, 1911.
27. Lafora, G. R. and Glueck, B.: Contribution to the Histopathology and Pathogenesis of Myoclonic-Epilepsy. Bull. No. 3, Govt. Hospital for Insane, pp. 96-108. Washington, 1911.
28. Stürmer, R.: Die "Corpora Amylacea" des Zentralnervensystems. Nissls u. Alzheimers Arbt., Bd. 5, pp. 417-518. 1913.
29. Siegert, F.: Untersuchungen ueber die Corpora amylacea sive amyloidea. Virschows Archiv, Bd. 129, pp. 513-546. 1892.
30. Achúcarro, N.: Darstellung von neugebildeten Fasern des Gefäßbindegewebes in der Hirnrinde eines Falles progressiven Paralyse, durch eine neue Tannin-Silbermethode. Zeitschr. f. d. g. Neurol. u. Psych., Bd. 7, pp. 375-383. 1911.
31. Snessaraw, P.: Ein Fall atypischen progressiven Paralyse der Irren mit Entwicklung von Fibrillennetzen des Bindegewebes in der Hirnsubstanz. Neurol. Centralbl. 30 Jahrgang, pp. 590-599. 1911.
32. ——— Ueber die Modifizierung der Bielschowskyschen Silbermethode zwecks Darstellung von Bindegewebsfibrillennetzen. Zur Frage des Stromas verschiedenen Organe. Anatom. Anz., Bd. 36, pp. 401-411. 1910.
33. Cerletti, U.: Die Gefäßvermehrung im Zentralnervensystem. Nissls u. Alzheimers Arbt., Bd. 4, pp. 1-168. 1910.
34. Liebman, V.: Zur pathologischen Histologie der Hirnrinde der Irren. Jahrbücher f. Psych., Bd. 5, pp. 230-242. 1884.
35. Noguchi, H. and Moore, J. W.: A Demonstration of *Treponema pallidum* in the Brain in Cases of General Paralysis. Jour. Exp. Med., Vol. XVII, pp. 232-238. 1913.
36. Nissl, F.: Diskussion über das Referat Plaut-Alzheimer. Allgem. Zeitschr. f. Psych., Bd. 66, pp. 924-929. 1900.
37. Weigert, C.: Kritische und ergänzende Bemerkungen zur Lehre von der Coagulationsnekrose mit besonderer Berücksichtigung der Hyalinbildung und der Umprägung geronnener Massen. 1885. Gesammelte Abhandl. Carl Weigert, Herausgegeben von R. Rieder, Bd. 2, pp. 167-187. Berlin. 1906.
38. Ziveri, A.: Su di un caso di demenza presbifrenica. Riv. di Patologia nerv. e ment. Anno XVIII, fasc. 5. 1913.

EXPLANATION OF PLATES.*

FIGURES 1-13 ARE FROM CASE I, 14-18 FROM CASE II.

- FIG. 1.—Bielschowsky's method. The homogeneous deposits are shown in all cortical laminae but sharply delimited from the white substance Zeiss a*, no oc., bellows 292.5 cm.
- FIG. 2.—Frozen section from material fixed in Weigert's glia mordant Van Gieson's staining. Homogeneous deposits involving considerable portions of vessel wall, small globular masses and even finely granular deposits in the same vessel; numerous occluded vessels, singly and in groups which have coalesced, surrounded by relatively large clear spaces; no appreciable cellular or fibrillary gliosis. Zeiss 8 mm. apochromat, comp. oc. No. 4, bellows 125 cm.
- FIG. 3.—Bielschowsky's method. The media of a small artery is shown converted into a homogeneous mass, the adventitia and intima unaffected apparently. Zeiss 2 mm. apochromat, no oc., bellows 100 cm.
- FIG. 4.—Van Gieson's stain. Small vessel in molecular layer of cortex, left paracentral lobule. Somewhat eccentric development of the process, adventitia involved, endothelial cells still visible, lumen patent. Zeiss 8 mm. apochromat, comp. oc. No. 4, bellows 165 cm.
- FIG. 5.—Van Gieson's stain on material as in Fig. 2. Typical perivascular infiltration of G. P., occluded and partially occluded vessels, one of the deposits, as it were, flowing around and between the plasma cell infiltrate. Zeiss 8 mm. apochromat, comp. oc. No. 4, bellows 125 cm.
- FIGS. 6 and 7.—Histological technics as in preceding figure. Vessels of white substance surrounded by an edema-like area, in Fig. 6, scant infiltration, in Fig. 7, typical G. P. infiltrate, dilated perivascular space traversed by fibers of connective (mesoblastic) tissue proliferation. Zeiss 8 mm. apochromat, comp. oc. No. 4, bellows 67.5 cm.
- FIG. 8.—Achucarro's tannin-silver method. Net-like proliferations of the adventitia which invade the surrounding nervous structures and anastomose with similar proliferations in nearby vessels. Zeiss 8 mm. apochromat comp. oc. No. 4, bellows 67.5 cm.
- FIG. 9.—Technics and photographic details as in Fig. 8, but here the vessel photographed is from the white substance and corresponds in location and type of alteration to the vessel pictured in Fig. 6.
- FIG. 10.—Bielschowsky's method, section of cortex. The fibrillary proliferations surrounding the vessel here shown are interpreted as principally of mesoblastic origin. Though this method does not differentiate as the tannin-silver procedure, careful study convinces one of their direct continuation with at least some of the fibers in the vessel wall; no deposits within the meshes of the fibers. Zeiss 8 mm. apochromat, comp. oc. No. 4, bellows 80 cm.

* All figures in reproduction from original photomicrographs have been reduced one-third.

- FIG. 11.—Van Gieson's stain. The homogeneous masses either side the vessel sectioned longitudinally are interpreted as the altered branches given off from the central uninvolved vessel. Zeiss 8 mm. apochromat, comp. oc. No. 4, bellows 67.5 cm.
- FIG. 12.—Frozen section from material fixed in formalin, section treated with alcohol for ten minutes, then stained with Weigert's elastica stain. Here innumerable, apparently extravascular deposits, interpreted, however, as vascular, are shown, for the most part discrete, but confluent masses still showing the independent character of the globules composing them are also exhibited. Photographic details as in Fig. 11.
- FIG. 13.—Histological technics and photographic details as in Fig. 10. Here, however, in what is conceived as a mesoblastic connective tissue proliferation proceeding from the vessel seen slightly above the center of the photograph, small homogeneous masses are shown within the meshes of the net-like proliferation.
- FIG. 14.—Van Gieson's stain on material fixed in alcohol, celloidin imbedding. The section from right calcarine area shows the focal disposition of the process in Case II and the apparent great increase of vessels within the affected area. Zeiss AA, no oc., bellows 170 cm.
- FIG. 15.—First temporal, left, toluidin blue after Nissl to show the paretic changes and to compare with Fig. 14 from the same case. Note the perivascular infiltration and the disturbance in the third lamina. Zeiss AA, no oc., bellows 187.5 cm.
- FIG. 16.—Toluidin after Nissl from a section including a portion of the focalized area shown in Fig. 14. Note the glistening, somewhat waxy, appearance of the altered vessels, which look not unlike urinary casts, and the absence of any appreciable cellular gliosis.
- FIGS. 17 and 18.—Van Gieson's stain on material fixed in Weigert's glia mordant from the focalized area in right calcarine area. In the longitudinally coursing vessel at the right (Fig. 17) the deposits are shown in varying sizes, the lumen still patent, while the vessels shown above and slightly to the left are occluded and the deposits are in larger masses. In Fig. 18 a large glia cell is shown, apparently in the act of engulfing one of the deposits. Both photographs are from the same section. Photographic details as in Fig. 11.

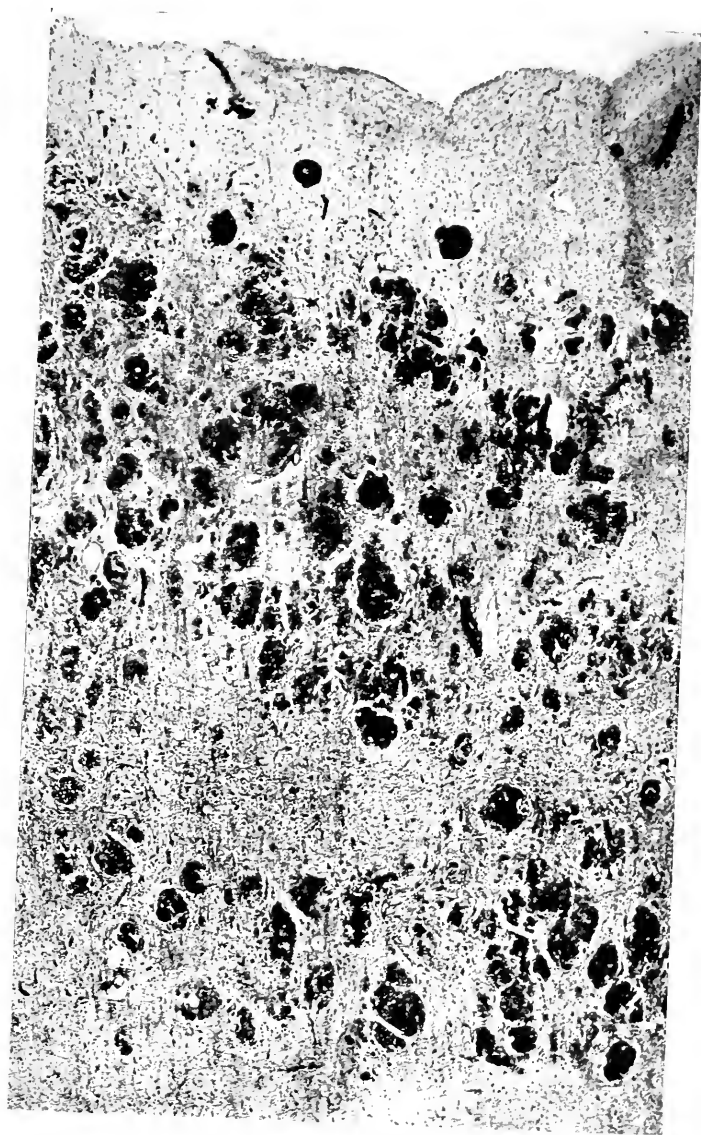


FIG. 1.

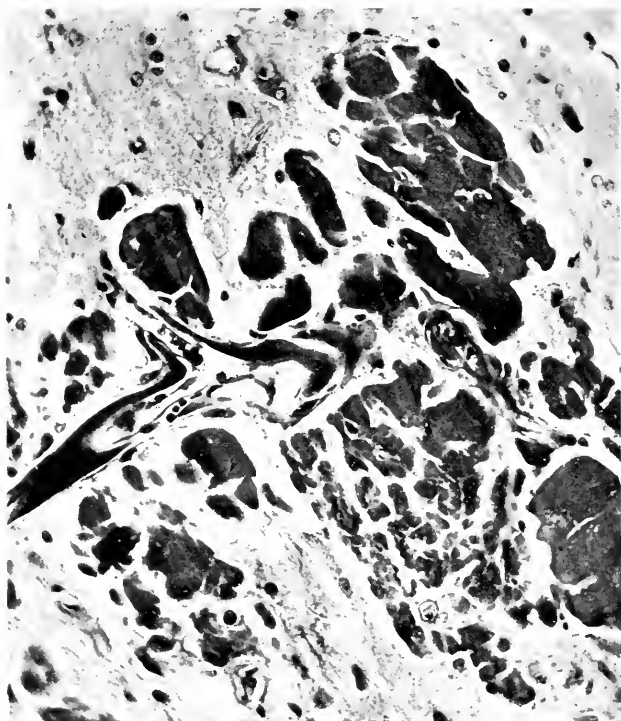


FIG. 2.

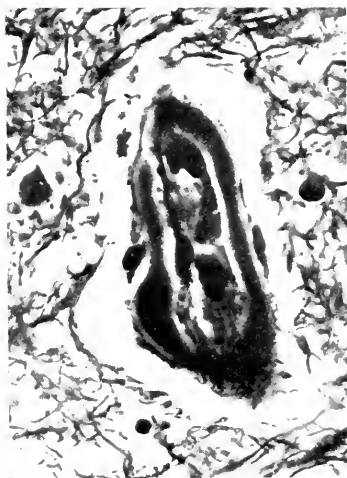


FIG. 3.

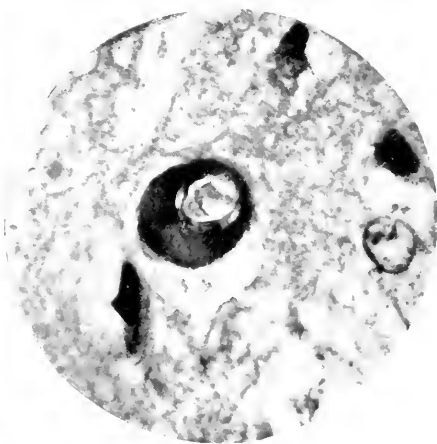


FIG. 4.

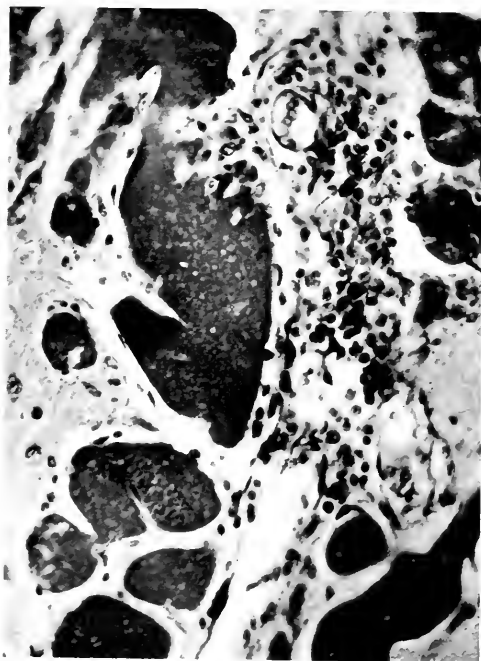


FIG. 5.

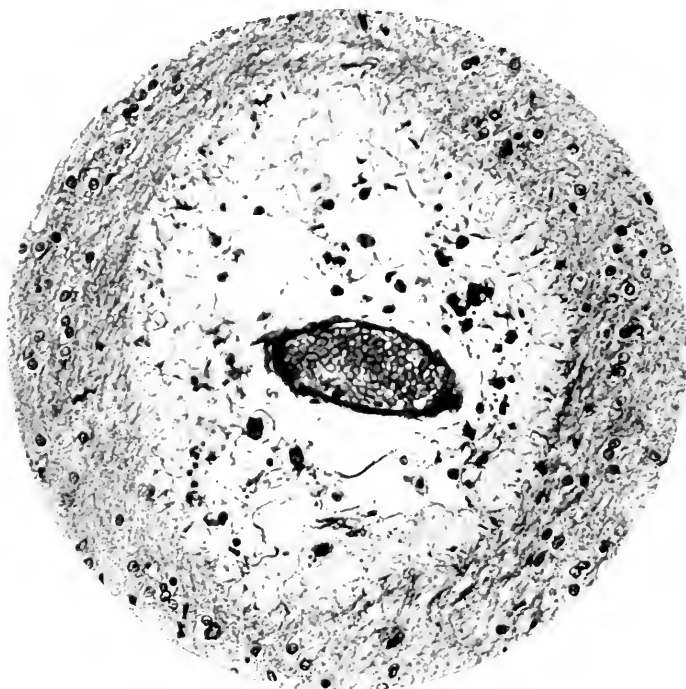


FIG. 6.

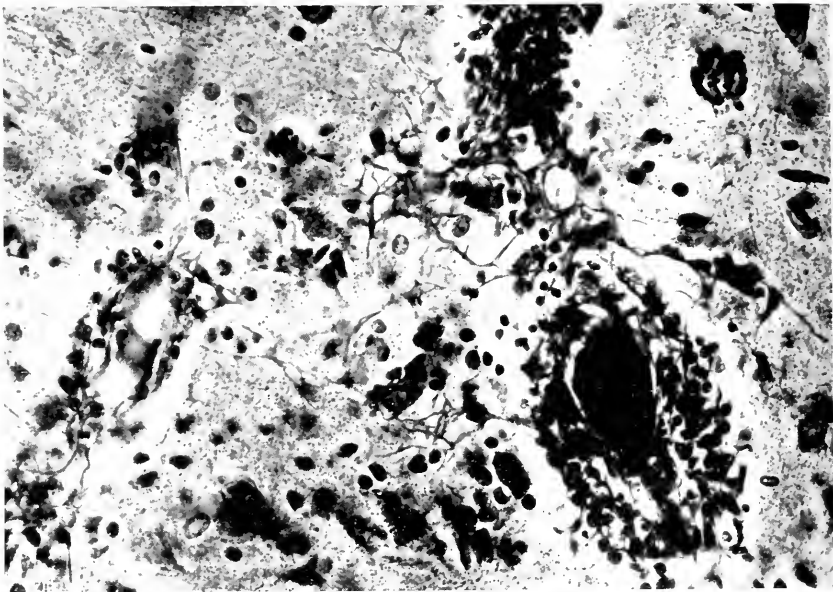


Fig. 8.

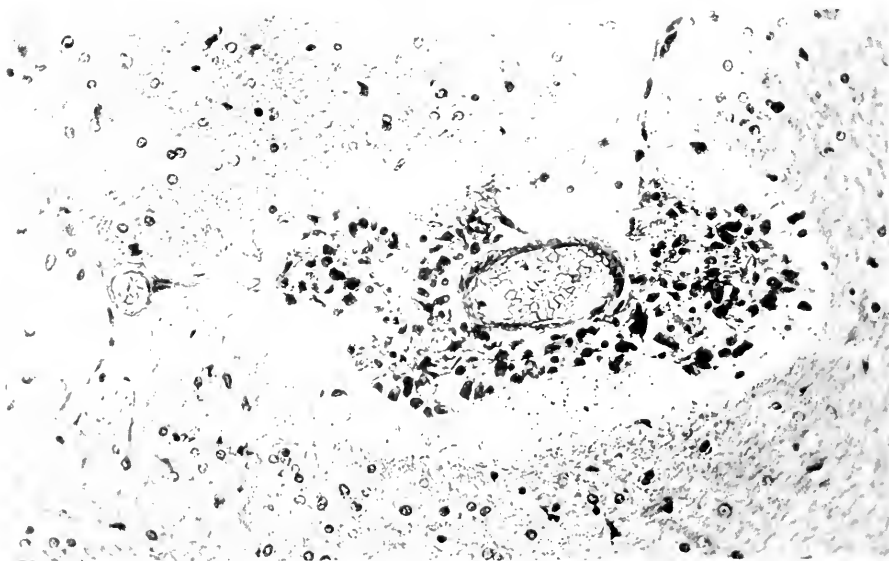




FIG. 9.



FIG. 10.



FIG. 11.

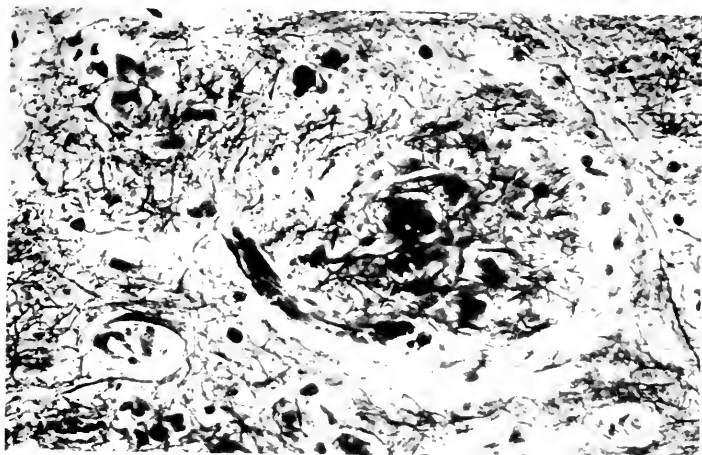


FIG. 13.

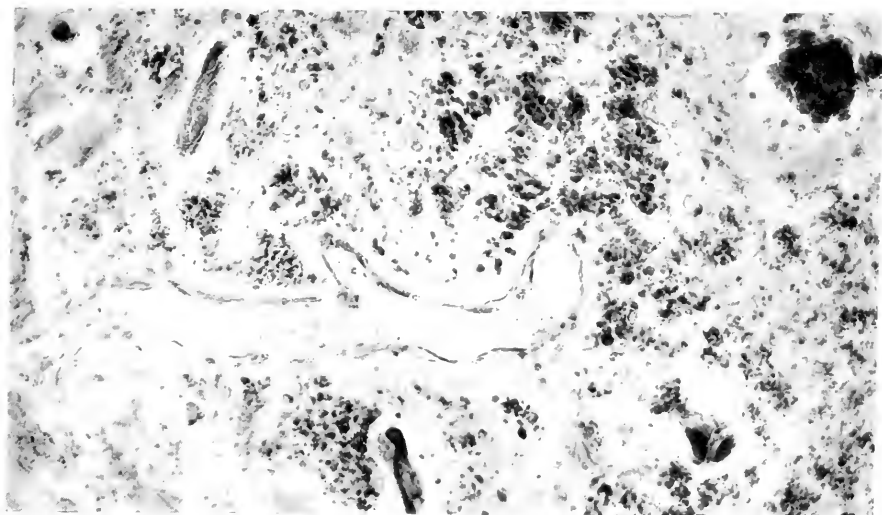


FIG. 12.



FIG. 14.

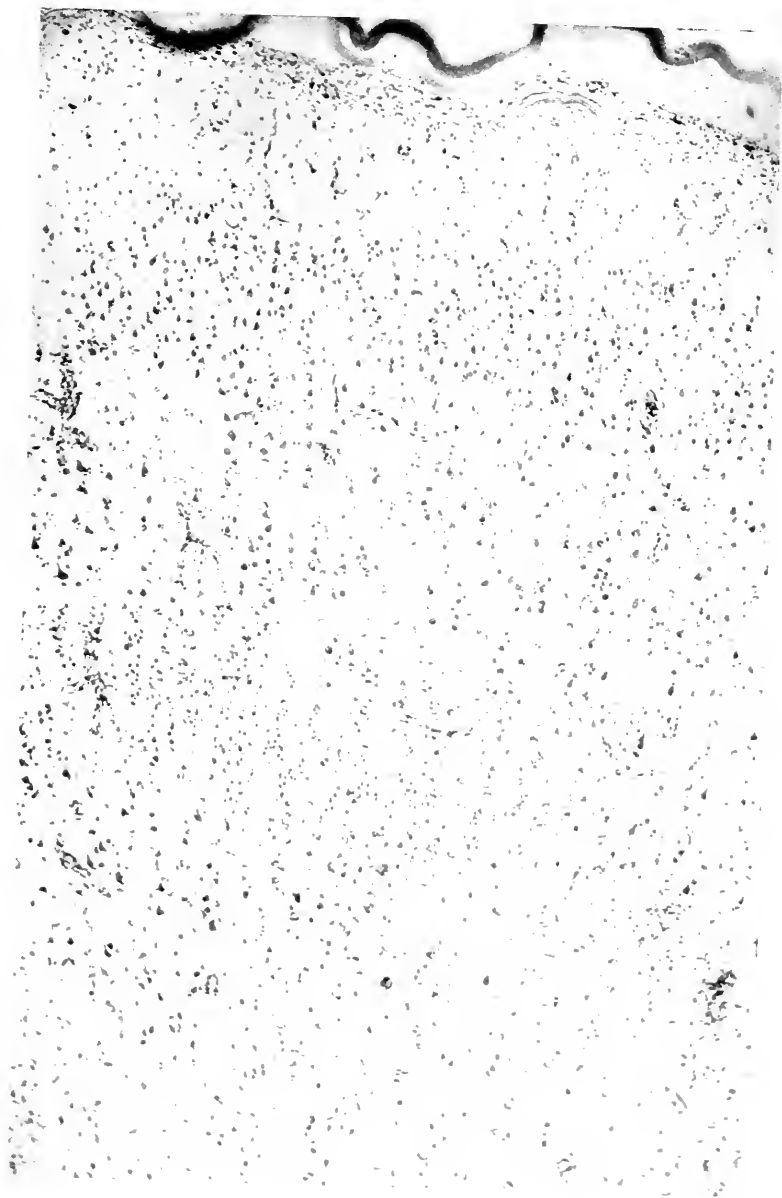


FIG. 15.



FIG. 16.

SOLOMON C. FULLER.



FIG. 17.

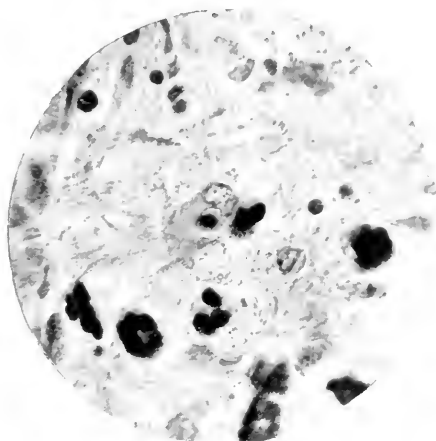


FIG. 18.

PSYCHOSES FOLLOWING APOPLEXIES.

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A review of the literature will reveal the fact that post-apoplectic psychoses have received less consideration than the subject deserves, in fact not a great deal has been written about this symptom-complex.

That a perverted mental state occurs after an apoplexy in a certain number of cases has always been recognized, but the textbooks on the whole have described this condition in a more or less perfunctory manner.

The usual and best recognized form of mental change after an apoplexy consists of a simple moderate intellectual defect characterized by failing memory, emotionalism and defective will. Beside this, however, there may develop a progressive dementia, best described as dementia post-apoplectica.

But more rarely there occurs a certain mental state which has features which are more or less characteristic of a post-apoplectic psychosis. It is to illustrate the last, that I venture to report two cases which recently have come under my observation in private practice and which I have had the opportunity of studying from the very onset of the mental symptoms, an event which is not often afforded the alienist who is more apt to be called to the care of such cases later in the course of the disease.

The following cases are practically identical in their clinical features and seem to present a phase of post-apoplectic psychoses which is infrequently observed.

CASE I.—M. H., aged 54. Father died of pneumonia; mother died of apoplexy and showed some mental change before the attack. A maternal uncle died of apoplexy, and a maternal sister died in an institution for the insane. Two brothers were living and well. One brother died of tuberculosis and one brother in infancy.

The previous history was negative, except that for some years she has suffered from pelvic trouble, dependent upon an anti-flexed uterus. The menopause occurred at 49 years of age.

For two or three months before the attack of apoplexy she had complained of nervousness consisting of irritability, being readily disturbed upon slight provocation and of a tendency to fall asleep in the trolley cars. There was also sugar found in the urine on one occasion. Under appropriate diet and general measures the sugar disappeared and there was considerable improvement in her general condition.

On January 14, 1913, she fell to the ground without loss of consciousness. This occurred on two or three occasions during the ensuing two days, and finally on the 16th of January after falling again the left arm and leg and left side of the face became paretic. Consciousness was not disturbed and the mental condition was good. On the fourth day the patient became emotional and depressed, complaining of headache and the paralysis became more profound until at the end of ten days she was completely paralyzed in the left side of the face, in the lower distribution and in the left arm and leg.

About the end of the first week there developed restlessness, depression, complaint of pain in the head and affected limbs. Less than three weeks after the attack she became noisy by night and during the day she was very despondent, crying much of the time, shouting for help and complaining that those about her were not affording relief and were neglecting her.

Later she believed that many people were in the same bed with her, that she had two heads and that the bed was on fire. She became completely disoriented as to time and place.

These mental states at first occurred in attacks lasting one or two hours. In the interval she moaned with pain, or cried bitterly and was depressed.

The episodes varied in character. She was disoriented all of the time. She was always away from home, sometimes in a hospital attached to a church in an adjoining parish; sometimes she was living in another world; sometimes she was in a convent and controlled by priests; sometimes she was confined in a house of ill-fame and was surrounded by half-dressed men and women from whom she could not escape. She had been taken to the house of ill-fame by a young fellow who drove her there after forcing her into a cab. This was a great disgrace and the day following this episode she thought she should go to communion.

Later these delusions persisted for many hours and days, changing from one to the other from time to time. They showed the following variations: She had gone to visit her parents (who were dead); liniments applied to her limbs were poison; the nurse put poison in her food and the medicines injected or given by mouth were poison. Paint was put in the milk which she refused for this reason. She wept bitterly over the funeral of a big fish. The Queen of Sheba had presented her with jewels. She was greatly depressed over the belief that she was gradually becoming a negro. Her bed was a carriage and her feet and legs the horses. She thought she was dead and in a coffin, and talked a great deal about funerals and undertakers.

Her legs were fish and her hand a baby. Her leg had been crushed in an accident and had been amputated. She had two heads.

She manifested most of the time hallucinations which varied in character. Italians were in the house, and dogs wandered about her bed. Repeatedly large numbers of fish filled the air of her room, some walking, some flying. The faces of maimed children and babies were often seen.

She was very noisy especially at night. She resented the lateness of the visits of her physicians and when they moved her during examinations giving her pain, it was done on purpose to hurt her. She repeated words and phrases over and over again. (Perseveration.)

This condition persisted until March 30, 1913, two months after the attack when she underwent a febrile reaction lasting ten days in which the temperature rose to 102° , and was associated with vomiting and abdominal distention. After this attack she improved quite rapidly in all ways, until three weeks later she became quite normal mentally.

She ceased to complain of pain and there was also considerable return of power in the paralyzed limbs. She improved to the point of being able to take a few steps assisted.

An early and persistent symptom was incontinence of the urine and feces. The examination of the heart and lungs was negative and the urine showed at times traces of albumin, and occasionally a few granular and hyaline casts. At no time could the kidneys be said to be a factor in the causation of the mental or other symptoms. The arm jerks and knee jerks were increased and more so on the left side and the Babinski phenomenon was present on the left. No change in sensation was noted, and there was no hemianopsia.

She stated after her recovery mentally that she thought that all the time she was sick she was in an opium den, or that she had been travelling or was among enemies. The hypodermics administered during her illness she believed was associated in her mind in some way with the morphine habit which she thought she had contracted. She remembers seeing horrible sights but the most painful memory was that she was confined in some house and could not get away to go home.

The mental condition in this case may be summarized as follows: There were maniacal outbursts; delusions mainly painful and persecutory; hallucinations, phantasmagoric and depressing; disorientation, and perseveration. Especially to be noted is the great complaint of pain in her head and palsied limbs, and the depressive state.

CASE 2.—A. C., aged 64. Father died at 77 of senile change and heart disease; mother died at an early age of phthisis; one brother died of heart disease; otherwise the family history is negative.

Fifteen years before the attack of apoplexy she had had an attack of neurasthenia and thereafter began having stomach trouble which persisted until a year before her attack, when a rest cure was given and

she recovered, remaining in good health until October 3, 1912, when she complained of continual pain in the right side of her head. On October 4, she awoke and found her left arm useless but she recovered from this in the afternoon except that she dropped things from her hand from time to time.

On October 7, 1912, she fell down from weakness in her left leg and felt weak in her left arm. At the same time the pain in her right temple became intense. On October 12, 1912, suddenly there was some confusion of speech and on the following day she lost power in the left arm and leg, the paralysis becoming complete in four days. From the beginning there was continual complaint of pain in the right temple and in the left arm and leg. She was very restless, moaning constantly and complaining that those about her would not give her relief. Two days later she showed some mental confusion. She believed she was on a boat, saw relatives in her room (who live miles away), thought she was in Atlantic City and saw soldiers and processions in her room. Then in a few days she saw phantoms and conversed with imaginary people. She was noisy and cried out at night and passed her urine involuntarily. She talked constantly, except when asleep, complaining of the unkindness of those about her, turning against her daughter her nurse and doctor and slept only under the influence of hypnotics.

She believed she had gone to New York on the 1.45 p. m. train and had come back at 6 p. m. the same day. She said she was not tired and stood the journey very well indeed, having walked around a good deal in New York and had gone to see a play called, "When Bunty Pulls the Strings."

She was most of the time very much disoriented as to time and place. She was very noisy especially at night, complaining a great deal of pain in the head and affected limbs and shrieking so loudly that the neighbors could hear. She was depressed most of the time abusing those about her for not giving her more relief. She often saw dogs and children's faces about her.

On December 2, 1912, there was some improvement in her mental condition for a short time but in a few days again she became irrational, very confused and talkative, moaning and crying. She was in a pulman car again, did not recognize her daughter, her doctor, or her nurse, talked continuously to imaginary people, and was still very noisy.

On January 4, 1913, she became stuporous, moaning and crying loudly, a condition which persisted until about March 22, when she began to clear up, mentally, recognizing everybody and conversing intelligently. Her mental condition continued very good for a month when, after an attack of the mumps, she again complained of great pain in the left leg and arm and cried most of the time although otherwise was clear in her mind.

The heart and lungs at no time showed any abnormality and the urinary analysis was negative. The reflexes were generally increased, more markedly so on the left side. No sensory changes were noted and an examination of the fields of vision failed to reveal any hemianopsia.

To summarize, the mental state was characterized by mild hallucinations; delusions somewhat persecutory and depressive; disorientation and maniacal outbursts. As in the first case cited the complaint of pain in the head and paralyzed limbs was a marked feature.

In both of these cases there was evidently a thrombosis, probably in the basal ganglia, if the central pain complained of in the affected limbs can be said to have a localizing value. Recently I¹ studied the subject of central pain and concluded that the most frequent site of the lesion causing this phenomenon was the basal ganglia especially the optic thalamus.

These two cases illustrate a form of psychosis after apoplexy which I believe of not very frequent occurrence.

It is unlike the dementia post-apoplectic of Ziehen,² Bianchi,³ or the post-apoplectic Schwachsinn of Kraepelin⁴; or the dementia occurring after apoplectic seizures described by Oppenheim,⁵ Griessinger⁶ and others. These are the usual forms of post-apoplectic mental disturbances and consists of an alteration of the will and the affective faculties associated with a diminution of the intelligence. The patient is restless, irritable, sensitive and shows some change in the character; his memory fails; he is childish; he exhibits shamelessness and other changes in the ethical viewpoint.

My cases resemble somewhat, but still differ from those described by Dupré⁷ which exhibit symptoms characterized by excitation, depression, absurd acts, incoherence, demential manifestations, cerebral automatism, incoordination, insomnia, complaints of injury, profanity, incontinence, constituting a *démencé agitée*.

While Dupré and others describe post-apoplectic mental symptoms characterized by delirium, hallucinations, hypochondriacal and depressive mental states with the same characteristics which my cases exhibited, it is not clear that these symptoms constitute an acute curable psychoses; but rather that they are added to or are a part of a progressive and incurable dementia.

It must be understood that both of my cases recovered their normal mental state though perhaps with some simple enfeeblement and certainly not to a full mental vigor, and were therefore not cases of dementia upon which was grafted a delirium, a mania,

a hallucinosis or what not but were examples of an acute psychosis of a curable type.

Legrand du Saulle⁸ in 1881 gave a very good description of the mental state following apoplectic seizures. He divided the symptoms into three classes.

(1) Those in which the intellectual decline is consistent with a civil and moral responsibility and consists of some change of the character and a weakening of the will; (2) those cases in which the patient is sensitive and emotional with feeble memory and lack of decision and spontaneity, a condition which he says cannot be called either dementia or yet a normal mental state; and (3) those cases in which the patient is more or less disoriented, forgets the identity of the people surrounding him, in which judgment is lost, in fact in which there is a true dementia. This includes also cases in which there are delirium, apprehensions and fears, ideas of persecution, depressive ideas, hallucinations at night and maniacal states, a condition which may go on to a complete dementia.

As far as the symptomatology is concerned my cases fall into the last class described except that no true dementia was at any time manifested by my patients.

Ziehen described a mental state as the result of a thrombosis bearing marked resemblance to the symptoms presented by my cases; namely, disorientation, delirium, perseveration, and particularly a weakening of the attention. He also stated that symptoms of Korsakoff's disease may be manifested.

It will be noted that the delusions in my cases were mildly persecutory in character. This has been noted by Dupré, Lwoff,⁹ Legrand du Saulle, Clouston¹⁰ and Magnan,¹¹ in their descriptions of the delusions of psychosis after apoplexies. Benon¹² observed this type of delusions in 24.1 per cent of his cases.

In my cases there was a hypochondriacal as well as a depressive tinge to the delusions and this has been observed by Ferriere,¹³ Dupré, Magnan and Benon.

There was a distinct tendency in these cases to maniacal outbreaks which occurred mainly at night, and were paroxysmal, a condition which had been noted and described by Lwoff, Dupré and Griessinger.

Hallucinations occurred in my cases and persisted throughout the entire course of the disease and were persecutory, phantasmagoric, and depressive in type. The hallucinations occurred during the late afternoon or at night which is characteristic.

They are described by du Saulle as unhappy, persecutory and frightful. In Dupré's experience they consisted of phantoms, animals, terrifying forms and painful hallucinations of smell. The terrifying nature of the hallucinations of sight have been noted also by Charon,¹⁴ and Magnan. Sometimes hallucinations of taste, odor and general sensibility have been observed. (Dupré.) They were presented according to Benon in 17.35 per cent of one hundred cases of hemiplegia.

Position of lesion. Benon has shown that in 51.5 per cent of the cases of post-apoplectic psychoses the palsy is left-sided, and in 48.9 per cent right-sided, therefore practically showing as he believed no preference for either side.

According to Luys,¹⁵ lesions in the left side were almost always accompanied by emotional excitation coexistent with pain in the palsied limbs. This is the only reference to pain in the affected limbs that I was able to find in the literature. It will be remembered that both my patients complained of great pain, spontaneous in character, before any symptoms of psychosis developed and persisted until the mental condition cleared.

Lesions of the first temporal region are said especially to give rise to emotional disturbances (Brissaud,¹⁶ Luys, and Seguin¹⁷) and softening of the corpora stria, the insula and the external capsule, Luys believed were also characterized by emotionalism.

Psychic symptoms according to Dupré predominated in alterations of the anterior part of the brain especially in the frontal lobes and in affections of the corpus callosum.

Intellectual disturbances with speech defects was recognized by Hoch as due to implication of the large ganglia and according to Clouston the most frequent site of the lesions in these cases was the basal ganglia. Lesions of the thalamus causes great emotivity according to Bianchi a fact born out by the observations of Holmes and Head¹⁸ and others.

Lesions of the left side of the brain cause defects of intelligence, Bianchi stated, much more than on the right side due to the loca-

tion of the center of the functions of speech on the left side. Journiac²⁴ described a case of melancholia with suicidal and homicidal impulses as a result of hemorrhage in the lenticular nucleus without palsy.

Dupré believed that the mental disturbance was proportional to the extent of the lesion and the extent of the cortex implicated.

Ziehen stated that after a thrombosis the intellectual decline is more intense than after embolism or hemorrhage. On the contrary Kraepelin agreed with Mingazini that it made no great difference whether the lesion was a hemorrhage or a thrombosis.

The mental symptoms developing after an apoplexy are looked upon as due to the diffuse vascular lesion of the brain which is associated with the hemorrhage or thrombosis (Ziehen, Charpentier,¹⁹ Ricksher,²⁰ Paton²¹). Oppenheim called attention to the fact that the dementia was seldom the result of the seizure or caused by the lesion itself merely, but was rather the outcome of this, plus general disease of the cerebral vessels and their consequence, and Bianchi also believed that the arterial sclerosis explained the mental symptoms after cerebral softening.

Autointoxication according to some authorities is the cause of the mental phenomena. Charpentier called attention to this, and Dupré believed that mental confusion with disorientation and anxious states may be associated with hepatic and renal insufficiency which appear to be related to the toxic and infectious nature of the psychic phenomena.

Symptoms of Korsakoff's disease which occurs in some cases, an occurrence described by Ziehen, suggests a toxic origin for this condition.

In these cases it is to be noted that there is in some instances a predisposition (Dupré and Magnan²²), and the rôle played by heredity (Clouston) and alcohol must not be overlooked (Lwoff).

The prognosis is unfavorable in the usual forms of psychoses described. The dementia is looked upon as being progressive (Ball and Chambard²³ and Benon), and is said to be worse in those cases in which there are foci of softening. Benon believed that the mental troubles rarely ameliorate. On the contrary the cases herein described show that there may occur a form of post-apoplectic psychosis which is recoverable.

A mental state preceding the attack has been described by Savage²³ expressing itself as irritability, emotionalism, poor memory, simple pain in the eyes, and hallucinations of hearing. Ball and Chambard stated that it was rare for the attack not to be preceded by sensory and intellectual troubles for weeks or months due he believed to atheromatous states of the cerebral arteries. A prodromal stage was described by Benon consisting of antero-grade amnesia, diminution of attention, modification of character, delirious ideas, excitation, depression or confusion. No mental symptoms preceding the attack were noted in my cases.

Evidence of autointoxication either from renal or hepatic insufficiency was lacking in my cases. There was in the first case described a distinct element of hereditary predisposition and both cases were of an age when arterial sclerosis of the brain could be expected to be present.

In conclusion I wish to emphasize the following features of these cases, namely, the acuteness of the attack; the curability of the psychosis; the presence of pain in the head and in the affected members; the depressive, hypochondriacal trend of the mental symptoms; the presence of perseveration; the occurrence of hallucinations of an unpleasant type and finally maniacal outbursts, the hallucinations and maniacal manifestations being worse at night.

REFERENCES.

1. Rhein: Jour. of Ner. and Men. Dis., 1912, p. 660.
2. Ziehen: Psychiatrie, 1911, p. 310.
3. Bianchi: Text-book of Psychiatry, 1906, p. 846.
4. Kraepelin: Psychiatrie, 1904, Vol. 2, p. 483.
5. Oppenheim: Text-book of Ner. Dis., 1911, Vol. 2.
6. Griessinger: Mental Pathology and Therapeutics, 1882, p. 123.
7. Dupré: Ballet. Traite de Path. Ment., 1903, p. 1065.
8. Legrand du Saulle: Gaz. des Hos., 1881, p. 537.
9. Lwoff: Etude sur les troubles intellectuel liés aux lésions Circonsrites du cerveau. These de Paris, 1890.
10. Clouston: Men. Dis., 1904.
11. Magnan: In Dupré.
12. Benon: These de Paris, 1905.
13. Ferriere: These de Paris, 1889.
14. Charon: Arch. de neurol., 1899, Vol. 8, p. 433.
15. Luys: In Ball and Chambard.
16. Brissaud: In Charon.

17. Seguin: In Paton.
18. Holmes and Head: *Brain*, 1911, p. 255.
19. Charpentier: *These de Paris*, 1904.
20. Ricksher: *Am. Jour. Insanity*, 1906, p. 55.
21. Paton: *Psychiatry*, 1905, p. 546.
22. Ball and Chambard: *Dict. des Sciences Médicales*, 1st Série, 1882, p. 581.
23. Savage: *Jour. of Ment. Science*, 1883, p. 90.
24. Journiac: *Ann. Médico-Psycholog.*, 1891, xiii, p. 431.

STUDY OF HALLUCINOSIS.

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The present study embraces 27 cases observed at various intervals during a period of seven years. In the largest majority of them (19) the hallucinations either remained intact or disappeared for longer or shorter periods of time and reappeared. Eight patients, after presenting hallucinations as the only morbid manifestations for periods varying from five months to two years, eventually developed delusive ideas and presented distinct classical psychoses. Evidently in this latter group the hallucinations appeared to be as the earliest manifestations of the future psychoses. In the first series the hallucinations existed either as obsessions (7 cases), and they were therefore "obsessive hallucinations" or else they accompanied obsessions (12 cases). The latter group constitutes "hallucinatory obsessions."

OBSESSIVE HALLUCINATIONS.

The seven cases of the first series with this disorder presented the following varieties:

One patient, a middle-aged man, had several attacks of acute alcoholism during a period of two years prior to development of the hallucinations. He recovered totally from alcoholism and resumed his occupation of banking which he conducted well. He was highly emotional. On one occasion, viz., two years later he sustained a shock (death in the family) and he developed the following phenomena: When walking on the street, he heard children running after him and calling him vile names. He would turn around and see nobody. While sitting in the bank, suddenly he would hear an inner voice "to use his own expression" telling him not to do it. The condition continued in spite of every effort on the patient's part to get rid of it. He realized the absurdity of it; he knew, he said, that no children ran after him and that nobody told him to stop doing it, because he saw no one, but he could not relieve himself of the auditory images. At various times he was obliged to discontinue his work or remain in his room. The hallucinations occurred only when he was on the street or in his place of business. The patient is still living and pursuing his occupation. They do not occur as often as formerly, but they have not disappeared. No other abnormality in his mental sphere has ever been observed.

The second patient, a girl of thirteen years, lost her mother quite suddenly (she died after an operation). Five weeks later she developed a visual hallucination. Every night when she was ready to retire, her mother in company with another woman appeared before her in white. She felt her hair being caressed by her mother's hand. The child was naturally frightened and for hours laid awake. She knew, she said, that dead ones cannot return, she realized the impossibility of it. Nevertheless she saw her mother at her bedside. The vision would appear only when no one else was in the room. For protection the girl had a cousin to sleep with her in the room. As long as the latter was awake, there was no hallucination, but as soon as she fell asleep, the patient saw her mother at her bed. The condition lasted for eleven months and then disappeared.

The third patient, a man of forty, tailor by occupation, served in the Spanish-American War. A year after the war he moved from San Francisco to Philadelphia. Here he met with many financial reverses and domestic misfortunes. He then developed visual hallucinations. When alone in the room or when on the street in the evening he would see corpses of the wounded soldiers scattered around him. He was convinced of the unreality of the condition. Nevertheless it was persistent and in spite of every mental effort he could not get rid of it. He would avoid remaining alone and going out in the dark. After a period of five years the condition is still present with the same intensity. No other abnormality in the mental sphere could be detected.

The fourth patient, a married woman of thirty-two, suffering from tic of the face, after a difficult confinement with instrumental delivery, during which the new-born child died, suffered for a period of three weeks from profound asthenia. Gradually she recovered and while convalescing in the country where she was taken, she developed visual and auditory hallucinations. She began to hear the dead child crying and saw the little hands outstretched towards her. The hallucinations would only occur at night. She often discussed with me the unreasonableness of those hallucinations; she firmly believed, she said, that they were the result of the exhaustion she suffered after the birth of the child. The condition lasted eight months. At that time she became pregnant. Curiously enough, they then disappeared to reappear after the confinement which again was difficult. The newly born child, which is still living, she said, brought back to her memory the dead infant and again she commenced to hear the crying and to see the hands of the dead one. They disappeared four months later and reappeared after the third confinement, which occurred two years later. The patient still has these hallucinations after five years of existence, but lately the visual images have disappeared. The patient only hears the dead child. She is highly emotional, cries easily and presents a hysterical right hemianaesthesia with concentric contraction of the right visual field.

The fifth patient, a man of thirty-seven, married, bookkeeper by occupation, lost all his savings through an unfortunate investment. He worried considerably over it, broke down in health and left for a seashore resort to recuperate. While convalescing, he developed a peculiar graphic halluci-

nation: he would see himself writing checks. When he was reading and it was quiet in the room, and nobody was around him, he would suddenly see his hand on the table and writing in a check book. He fully realized the unreality of it as in the intervals between the hallucinations he could not find the checks he supposedly wrote. The condition lasted during the entire period of his sojourn at the resort, viz., two months. When he resumed his former occupation he was totally free from the hallucinations. A year later he had another attack of neurasthenia and again hallucinations developed but of a different character. He would see himself walking before the windows of the room while he was sitting in the room or lying in bed. In view of his consciousness being preserved he realized the unreality of the visual phenomena and considered it in a very light manner. The condition lasted three months. He recovered completely.

The sixth patient, a girl of eighteen, suffered disappointment in a love affair. For weeks she remained confined to her house, declined invitations and received no one. She lost considerably in weight and suffered from insomnia. She was sent to Europe on a trip from which she benefited greatly. Upon her return to the United States, while sitting once with her mother in the dining room, she heard her former lover's voice. (The young man died since and she knew it.) She sprang to her feet, but realized the unreality of it. Since then she kept on hearing his voice very frequently, on the street, in her home and even in the theater. When she consulted me, she told me that while playing the piano she was often compelled to discontinue her playing because of this "haunting" voice which she could not overcome. She knew perfectly well the impossibility of dead persons speaking. While the condition annoyed her considerably, nevertheless she was not alarmed by it. For a period of four months the hallucination persisted. It disappeared after a violent shock (a collision of the automobile in which she was riding with a friend). A year later the condition returned and again upon a strong emotion: she witnessed the drowning of a young man in the ocean. It persisted for six months with very brief intervals of amelioration. It is now two years since the last attack of hallucination disappeared.

The seventh patient, a girl of fifteen, following a fright of no great moment, developed an auditory hallucination. She heard a voice continually repeating the words "she will be killed." The voice did not appear to her familiar, she knew that no one was after her but she could not get rid of the voice. She hears it distinctly, she says. The disturbance annoyed her considerably. However beyond a slight irritability and depression, there was no indication of any serious mental disorder. The condition lasted eighteen months and she finally made a complete recovery.

In these seven examples of obsessive hallucinations we find all the elements of obsession, viz., irresistibility, emotional state, anxiety and total integrity of consciousness; the hallucination has here an independent existence and constitutes by itself an obses-

sion. All my individuals presented a marked pathological emotion, in all the hallucinations followed an emotion and in all the underlying basis was a state of lowered resistance created by some preceding emotional shocks, such as difficult confinement, financial reverses, deaths in the family.

The second group of twelve cases present examples of

HALLUCINATORY OBSESSIONS.

CASE 1.—Boy of fifteen of a neuropathic family, has been suffering from *aboulia*; when walking on the street, he could not step over a leaf of a tree, or a brick; when insisted upon he would be thrown into a state of anxiety, tremble, cry and fear. Soon he developed visual hallucinations: the sight of a brick or leaf would be constantly before him. Whether at the table or at work, he saw these two objects. Recovery from *aboulia* removed these hallucinations. Four years later the same disturbances returned.

CASE 2.—Girl of eighteen who presented in childhood several attacks of *chorea*, also *enuresis* for a number of years, developed a fear for having onions on the tables. As soon as they would be brought in the dining room, she would have to leave the table as otherwise she would be unable to continue her dinner. She cried and was exceedingly nervous when she would make an effort to overcome the sensation of fear. She realized the absurdity of the condition, but could not overcome it. Gradually she began to smell the odor of onion in every kind of food, even when this vegetable was not in the house. The condition continued for four years with intervals of amelioration or disappearance of the olfactory hallucinations.

CASE 3.—Middle-aged man, neuropath, suffered from *folie de doute* with especial reference to letter writing; he would tear the letters up a number of times before he would settle his mind on one to be mailed. He observed that after the letter was finally dropped in the mail box, the address of the envelope would continuously be before his eyes without giving him any relief for days.

CASE 4.—Middle-aged man, whose uncle and niece were confined to an insane asylum, was in constant fear of becoming infected through his contact with other people. In restaurants, in hotels, he feared to use forks, knives or napkins. Getting on the trolleys, he avoided touching the handles, the bars (*délire de toucher*). He reasoned that while in practical life it is impossible to avoid handling objects or meeting people, nevertheless he felt that he could not get rid of those thoughts. The condition lasted five years. During this time he developed hallucinatory images of visual nature: for weeks at the time he would have before him suffering faces of diseased people. They would disappear and reappear.

CASE 5.—Young woman of twenty-nine, single, with erotic tendencies, developed a fear of being constantly followed on the street by persons having immoral designs on her. She knew perfectly well, she said, that she could not accuse every man on the street of those thoughts, but the irresistible

thought was constantly with her. Soon she observed faces of men would suddenly appear before her when she was alone in her room. She would see them when she would get awake in the night. The patient was an intellectual woman. She realized the unreality of the condition but she was considerably disturbed by the persistence of it. She finally recovered.

CASE 6.—Middle-aged woman, obese, with bad family antecedents (epilepsy, insanity), conceived a fixed idea that she is being considered by everybody to be pregnant. She ceased menstruating ten years prior to this date and she gave everybody her age fifty-nine. She knew that such a thought was absurd, that none could possibly suspect her of being pregnant, but the thought was so persistent that it disturbed her considerably. Soon she began to hear remarks such as this: "Look at her" or "She is ready to be confined." She was tortured by the thought and the hallucination. At first she made every effort to overcome it, but failed. She then left town for several months and while away she recovered.

CASE 7.—A musician, twenty-three years of age, once after playing solo at a private entertainment, became very nervous and could not sleep that night. Since then he developed an extraordinary fear of playing before an audience. He could do it easily at home, or before a few friends, but as soon as he was invited to play in a public place he was seized with anxiety and fear and cardiac palpitation. In spite of all efforts to overcome it, he could not succeed. He then observed that someone would constantly speak so close to his right ear and say: "You will fail, do not try it." He heard it, he said, very clearly. It became very persistent. He would hear the voice wherever he went and as soon as he awoke in the morning, he would hear the voice only on the right side. He then decided to take up teaching and gave up definitely playing before the public. The condition persisted three and a half years. He finally recovered.

CASE 8.—A woman of thirty, developed a special penchant for hatpins. She bought them in large quantities. Once she happened to injure slightly her scalp while fastening on her hat with a pin. Since then she developed a fear of putting on her hat with her own hands. If she persisted, she would be thrown into a state of anxiety, would tremble and even cry. She was obliged to have invariably assistance. The condition lasted three months. Once she made an attempt to dispense with the assistance of a maid. The moment she raised her hands to her head, a red spot appeared before her eyes; she saw blood. The condition would repeat itself on subsequent days at each attempt to put on her hat. Gradually it developed into a continuous state. The blood spot was always before her. The fear of injuring herself with a hatpin became consequently more intense. Recovery from the hallucination followed at the end of eighteen months, but the obsessive fear lasted four years with brief periods of intermission.

CASE 9.—A girl of eighteen, sister of the preceding patient, accomplished pianist, developed a doubt as to her playing well certain pieces of music if she is seated on the piano stool in an upright position. She thought she could do better if she sat sideways. While realizing that scientifically a change of a sitting position has no bearing on the execution,

nevertheless, the idea "haunted" her. She could not resist the imperative desire to adopt the new position. The condition lasted a whole year when a new feature made its appearance. At that time she was given psychotherapy by persuasion method. Once when she attempted to overcome the obsession, and sat on the stool facing the piano, the moment she struck the first note she heard a voice saying, "it is wrong," "change your position." From that time on she heard those words as soon as she sat down at the piano. In a few weeks this auditory hallucination became so persistent that the patient could hear the words continuously. Recovery followed in eighteen months.

CASE 10.—Woman, cousin of the two previous patients, aged forty-two, suffered from kleptomania. Although she was a woman of means, she could not resist taking, in department stores, inexpensive articles, such as hairpins, hooks, buttons. When she returned home, she insisted upon having the objects sent back. A number of times she sought medical advice for the condition of which she was perfectly conscious and which she actually abhorred, but which she could not overcome in spite of her efforts. Once upon leaving a store with the stolen articles, she heard steps following her. She turned but saw no one. She went on and again she heard the steps, which followed her until she reached her home. Since then she kept on hearing steps behind her as soon as she appeared on the street. She appreciated the unreality of the condition, nevertheless she heard steps distinctly. She made a complete recovery at the end of two years.

CASE 11.—A young man of eighteen with a history of some psychosis in the family, but otherwise presenting no signs of insanity, suffered for a period of four years with an obsession as to his own mental faculties. He feared that he would lose his mind. Notwithstanding the fact that he occupied a responsible position, viz., managing a furniture factory and that at no time any complaint was made against his activities, he nevertheless could not get rid of the idea of eventual insanity. He was an ardent golf-player. Once during his favorite game, he overheard one partner speak of another that the latter could not last long and would go "crazy." Since then our patient whether on the street or in doors very often would hear the word "crazy." The condition is still persistent seven years after the onset. The patient realizes the absurdity of the situation.

CASE 12.—Man of twenty-eight, grocer by occupation, excessive smoker was obsessed like the preceding patient by the thought that he was going to lose his mind. The condition persisted for four years. He knew, he said, that he actually did not lose his mind as he carried on his business perfectly. Once he dreamed of an insane institution and saw himself among the inmates. Since then he would often see when he was alone, crowds of people walking towards him. He ridiculed the idea but in spite of his efforts he could not overcome the visual hallucinations. The condition lasted two years. Finally he recovered.

In these twelve examples of hallucinatory obsessions the following features can be brought out. The obsessive ideas developed before the hallucinations. The hallucinatory phenomena appear to be a continuation of the obsessive ideas or rather the external materialization of the latter. As soon as the hallucination has made its appearance, it does not substitute the idea but it exists conjointly with and reenforces the latter. Otherwise speaking the obsessive images assume an aspect characteristic of phenomena observed in general or special sensory sphere. Indeed we find here auditory, visual, verbal and olfactory phenomena. Like the original obsessive idea, the hallucinatory presentations developed and existed since within the field of consciousness. They remained so until their recovery took place in spite of their character contradictory to the conscious state. Therein lies evidently the reason of episodic at first and later of complete disappearance of both obsessions and hallucinations.

In the following series of cases, we find examples of obsessive phenomena, in which volitional inhibition grows gradually weaker and weaker and perforce the chief disturbances proportionally manifest themselves with greater power. We witness here a gradual transition into morbid states characteristic of genuine psychoses.

CASE 1.—Middle-aged woman beginning her menopause, commenced to complain of seeing faces through the window as soon as evening approaches. The visions at first were particularly marked in the dark. She saw faces passing by the window and each looked into the room and disappeared. As they were all at first of a pleasant nature, she was rather amused by them. She often chatted about and ridiculed the vision. The condition lasted three months without the patient being especially disturbed. Unfortunately the hallucinations became more intense, more frequent and began to show a change in character. Instead of being pleasant, the faces became ugly, repulsive and soon threatening. The patient commenced to fear them. Gradually she developed such an intense fear that she would scream every time the faces would appear at the window. Soon she would see them in her room, on her bed, under the bed. At each appearance of the faces she trembled, screamed and cried for help. In discussing the condition the patient, at first rejected the idea of reality, but soon began to reflect on the subject, and insisted on the possibility of some cause or reason for the hallucinations. She finally reached the conclusion that perhaps somebody must be inimical to her and persecutes her by sending those visions for the purpose of frightening her. Later on she said, that while formerly she did not believe in

visions, now she firmly believes in them because they are so real. Step by step the patient developed delusive ideas of persecutory nature which became intensified by the hallucinatory images. She became restless, began to accuse her relatives of conspiracy, believed her husband wished to get rid of her so that he could marry another woman. Once she attempted suicide by turning on the gas. At another time during the hallucinatory display she imagined that her sister came to torture her, she threw a knife with intentions to kill. Having become unmanageable she was committed to an asylum. There she showed evidences of paranoia.

CASE 2.—Middle-aged woman after having nursed several of her children for various infectious diseases began to complain of exhaustion. Soon she developed auditory hallucinations. She heard people calling her bad names through the windows. She often joked about them and ridiculed the possibility of such an occurrence. The condition lasted about two months. Not getting any relief from it and the state of exhaustion still persisting, she commenced to worry. With the appearance of depression the hallucinations became more intense and more frequent. She commenced to analyze the hallucinations and to question their meaning. She gradually developed the delusive idea with reference to herself as being to blame for the situation. She must have committed a wrong act for which she is to suffer. Insomnia, marked depression and the desire to die were the other symptoms which soon made their appearance. Presently the patient, confined to an institution for the last two years, presents the typical picture of involution melancholia.

CASE 3.—Middle-aged woman, like the preceding patient developed identical hallucinations which for a period of six months remained of obsessive nature. Gradually delusive ideas made their appearance which were also of the same character as in the preceding case. The patient committed suicide eighteen months later.

CASE 4.—Young woman of twenty-eight with a neuropathic personal and family histories suffered for a period of fourteen months from visual hallucinations of obsessive nature. Faces of men, pictures painted in red would appear before her at first only at night, but later also during the day, but only when she was alone. While they were merely annoying at the beginning, they disturbed her later. Some emotional shocks occurred to her at that time; she lost her parents within one week following an accident in an automobile, her youngest brother, of whom she was particularly fond, contracted diphtheria. The hallucinations became more intense and appeared more frequently. From pleasant they turned out to be disagreeable, and even threatening. She commenced to fear them, to have a horror in anticipation of them. She then abandoned herself to analysis of the hallucinations. Her actions became very peculiar. At times she would remain seated motionless in one position for hours, and talk to herself. She would get up at night and wander through the house as if in search for some one. She never asked for food. She gradually lost her affection for her people and became totally indifferent. Soon she commenced to be suspicious with regard to persons and to her food. She

often refused to eat and when insisted on, she would make the person who brought the food to her to taste it before she ate it. She was found once with a knife in her hands. She is now in an institution presenting the picture of dementia præcox.

CASE 5.—A woman of sixty-five with a history of alcoholism twenty years prior to the present date, otherwise in good physical and mental health developed after a loss of three children, visual hallucinations of a special type. When in bed she would see a crowd of very small persons coming closer and closer to her bed. The size of those hallucinatory individuals would be at times extremely small; they were "Lilliputians." She saw them crowding the room more and more and she often wondered how they all could be placed. New ones kept coming in the room as long as the vision lasted. Sometimes they would dance before her or else get on her bed or under her blankets; then she felt the warmth of their bodies. Not infrequently she laughed before me reciting to me the fanciful manner of acting of these Lilliputians. Soon she began to view the hallucinatory images in a serious manner. She no more questioned the unreality of the condition, but accepted it as inevitable and as having a distinct meaning. The Lilliputians are sent to her for a purpose: "they are perhaps sent to her by her dead children," or else "by some inimical persons." She thought that her brother now knowing that she had no more children to leave her fortune to, wishes to get rid of her and thus sends spirits to carry her away. She soon felt that everybody is working against her, that they are wasting and spending her money. She would close her doors, windows tightly and pull down her blinds. The hallucinations became very persistent. Thinking that if she had children nobody could expect to inherit her money, she conceived the idea of divorcing her aged husband and marrying a very young man. She is now confined to an institution presenting the picture of dementia.

CASE 6.—Young man of thirty-two, banker, had from five to seven years of age, epileptic seizures. No other abnormality or morbid condition could be observed until the age of twenty-seven when he commenced to complain of sudden appearance before him of animals, or disagreeable faces of women. The condition was not continuous but transitory. It was not accompanied by any disturbance of consciousness and lasted about half-an-hour each time. He would see them at first only when he was alone in the room, but later on they would appear at any time. However, the condition did not interfere much with his work, only rarely would he miss his regular office hours. The patient realized that the vision was unreal and he often spoke of them in a jesting manner. A year later a radical change was observed in the patient. He became morose, self-concentrated, restless. For days he would leave his home and disappear, then turn up in his office. His humor was exceedingly changeable. Disagreeable, he would suddenly become gay. The former hallucinations became to him a reality. He commenced to interpret them. He thought that those women tortured him intentionally because the two women whom he had refused to marry are taking revenge on him and are sending the animals

and ugly women to annoy him and "thus destroy his vitality." This delusion became more and more marked and the patient was finally taken to an institution. He is suffering from dementia præcox.

CASE 7.—Man of forty-three had during the last twelve years a number of attacks of obsessive hallucinations of auditory nature. They would come on at irregular intervals episodically. Each attack lasted two or three months. During that time no other abnormal phenomenon was observed and the man attended to his occupation of printer in a perfect manner. He appreciated the absurdity of the voices and considered them unreal. All he heard was: "drown him, take him, he is a villain." The last attack followed an unusual application to his work accompanied by considerable worry over his marital relations. The hallucinations lasted longer than usual, viz., six months and he was unable to do his work steadily. He was compelled to rest several days in the week. As the hallucinations became more persistent, he began to analyze the situation and gradually found various explanations for their presence. He soon became delusive and developed the idea that "someone is back of all this." He concentrated his thoughts on his fellow workers who "tried to get rid of him because they were jealous of his great success." He singled out especially two persons, and rapidly found their associates among his relatives who helped them to ruin him. He became dangerous and was sent to an asylum. The man is suffering from paranoia.

CASE 8.—Brother of the last patient, young man of twenty-one, stenographer by occupation, passed through high school with honors. When he wished to prepare himself for West Point, he found it very difficult and even impossible. He could not concentrate his thoughts. He was obliged to take up stenography. He held the position for three years and did his work very satisfactorily. Within the last year he complained on a number of occasions of hearing disagreeable voices, telling him he will never succeed and that he will end his life in an asylum like his brother. He struggled against these thoughts, fully believing that the voices were absurd and unreal. As they became more and more persistent, he began to feel annoyed by them, neglected his work and at times intended to leave his parents. Gradually he entered the phase of self-analysis and called on me frequently for explanations of the significance of the voice. Not being satisfied with my replies he abandoned himself to his own contemplations and resolved that "someone must be the cause of this." His thoughts worked in the direction of his stepmother whom he commenced to accuse of persecuting him. At the same time the hallucinations became more intense. He began to lose sleep and would not eat. He ran away from home a number of times, was found wandering aimlessly in the country. He was then committed to an institution suffering from dementia paranoïdes.

An analysis of the last cases show that all patients presented at first hallucinations and later developed delusions. The point of departure of the delusive ideas was the hallucinations. The

character of the latter was distinctly obsessive. We have therefore examples of transition of obsessions into delusions. For a time these patients realized the absurdity of the condition, because their reasoning power was preserved in spite of the fact that they were conscious of the want of harmony between the will and the inability to remedy the condition. We observe that the delusional turn of the mind dates from the time that the patients commenced to analyze the obsessive hallucinations. They then lose all power of critical judgment, become passive, cease to struggle against the overwhelming obsessions. Their consciousness, which helped them before to struggle, becomes absorbed and they accept then the condition, find complete justification for it and ascribe it to some tangible cause. A genuine delusion is then formed.

Transition of obsessions to delusions while not very frequent is not at all a rare phenomenon. This possibility was pointed out, first by Schüle and especially by Séglas in 1889. (*Annales Médico-Psychologiques*.) In 1904 I reported two such cases in *Medical News*. In the present series of cases we observe that the source of origin of the delusive ideas lies in the hallucinatory images. Otherwise speaking the new faulty ideas are a continuation or a natural consequence of the obsessive thoughts intimately associated with the hallucinations. As long as the patient did not interpret the obsession, the latter remained as an obsession. The moment analysis or interpretation commences, a delusive turn of the mind makes its appearance. In this connection it is interesting to observe that the onset of delusional interpretation coincides in almost every one of my cases with some disturbance in the emotional sphere, such as shock from death, diseases among the relatives or some exhaustive state of health. At that time, it seems a break or a complete dissociation of consciousness takes place; the latter has no more control over the psychic processes. In individuals affected with obsessions consciousness is always disturbed but only in a primitive stage or in rudimentary proportions. As soon as a complete split-up occurs, delusive interpretations easily develop.

Let us now turn our attention to the psycho-physiology of the hallucinations as observed in the three series of my cases.

As it is well known some authors believe that hallucinatory perceptions are due to a peripheral irritation of the sensory organs.

I am unable to corroborate this view as there is not an indication in this respect in any of my cases.

As in elaboration of a hallucination there are always two elements, viz., intellectual and sensory, some authors introduced a so-called psycho-sensory doctrine of hallucinations. Baillarger first and Tamburini (*Revue Scientifique*, 1887) next consider a hallucination as due to an irritation of the psycho-sensory centers in the cortex. The latter believes that the phenomenon consists of a spontaneous setting free of energies stored up in the psycho-sensory centers. Tanzi (*Riv. di Patol. Nerv. e Ment.*, vol. 6) accepting the psycho-sensory doctrine attempts to be more concise in his conceptions by believing that hallucinations originate in the association centers of Flechsig. To him the image starts in those centers, ascends to the psychic area and descends to the same sensory centers; thus a new form of sensation occurs which is mistaken for reality; hence a hallucination. Tanzi bases his claim for a descending centrifugal course of a sensation, which is contrary to the classical conception of the function of sensory pathways, upon the actual existence of descending fibers in the sensory centers. If we admit that the sensory centers play a rôle in the production of hallucinations, we can do it only by supposing that several sensory elements are at work simultaneously. Ocular, auditory or other sensations are very complex phenomena and if any one special sensation in a given case may play a predominant rôle, nevertheless representations from several centers are invariably associated with it. This association takes place in Flechsig's association center mentioned above. According to the psycho-sensory theory the hallucination apparently originates along the sensory pathway which as well may be at the periphery. Here again this view cannot explain all the facts observed.

Applying this doctrine to my cases with relation to the obsessive character of the hallucinations, we encounter the same difficulty as in the purely sensory theory. It cannot therefore be accepted as definite. We are naturally led to a third view according to which a hallucination is considered purely a psychic phenomenon. Esquirol (*Des Maladies Mentales*, 1838) long ago said that sensations in hallucinations are but ideas reproduced by memory. He therefore intimates the reproduction of thoughts and ideas accumulated through experience but already forgotten by the con-

scious ego. Baillarger (see above) also sees in the hallucinatory phenomena old stored up energies which in some way gained a spontaneous outlet. Herein lies, I believe, the foundation for the new interpretation of subconscious phenomena upon which Freud's analytic method is based. As it is well known, according to the new doctrine, the subconscious world of an individual is composed of experiences, thoughts, wishes, ideas, sensations. They are never inert but sometimes extraordinarily so active. They are split off from the conscious ego, but exist alongside the latter. Every individual thus presents a doubling of consciousness. The conscious psychic ego spends its activity on continuous creation of new thoughts or wishes and of their realization or fulfilment and thus finds contentment and satisfaction in life. The subconscious ego is entirely under the domination of those latent past experiences in the intellectual and sensory spheres, which could conveniently be called "complexes" and which have never disappeared but are only repressed. Should they by some psychological process reach the conscious ego, they may assert themselves as fanciful picture formations, viz., hallucination. On this basis the hallucinations of the three varieties of the hallucinatory phenomena in my three series of cases find their explanations. In the obsessive hallucinations of the first series we find that the phenomena were nothing more than a reproduction of the more or less remote events that had actually occurred in the lives of the individuals. While in some cases the reproductions were exact, such as in the case of the mother who saw the face of the child that died some time ago; in other cases the hallucinatory phenomena appeared as occurrences somewhat modified from the original. In some cases we observe complete substitutions which apparently have no resemblance to the former events, but a close analysis will invariably reveal the past experiences in toto: their appearance alone had changed but not the quintessence.

The relationship between hallucinatory images and obsessive ideas as seen in the series of cases in the hallucinatory obsessions is too obvious and too evident to dwell upon. Here the hallucination is but an exteriorization of the predominant conscious thought of the obsessed individual.

Quite interesting from the pathogenetic standpoint is the fact that the obsessive thoughts and the substituting or accompanying

hallucinations in all my patients developed invariably under the influence of some moral or intellectual disturbance. It seems as if the past experiences which actually occurred and remained dormant became displaced or aroused through the unexpected or sudden shocks and thus given an impetus for self-reproduction. It is indeed remarkable to notice the uniformity with which the hallucinatory phenomena in my cases proved to be in a direct relationship to events that actually occurred in the lives of my patients. The conception of sub-conscious complexes has been indeed very helpful to me for the understanding of the obsessions and hallucinations in connection with obsessions.

From the foregoing remarks, one will observe that the above-mentioned sensory and psycho-sensory theories of hallucinations are by far less satisfactory for the understanding that the psychological doctrine, the origin of which we find in Esquirol's view (see above). This author only intimated the existence of hidden psychic processes but to Bleuler and especially to Freud we owe the further detailed elaboration of the mechanism which controls the mental operations in normal and pathological life. The psychic theory alone is apparently able to give a clear insight into the processes connected with formation of morbid ideas, such as obsessions and hallucinations.

The clinical side of the present study permits me to draw this conclusion that hallucinations may exist either as independent phenomena possessing all the characteristics common to obsessions (obsessive hallucination), or else as phenomena accompanying or following obsessive ideas and thus constituting a symptom of the entire psychasthenic syndrome.

Janet in his work "*Obsessions et Psychasthénie*" does not consider the hallucinations of psychasthenics as genuine hallucinations. According to him they are lacking in completeness and thorough exteriorization: the patient, he says, rather thinks than he sees or hears, but he is not totally sure. Janet considers them as "pseudohallucinations." In my cases of the second group Janet's contention is only partly corroborated; while in some of the cases the pseudo character of the hallucinations was evident, in others true, genuine hallucinations were also in existence. It seems therefore that his contention is somewhat extreme.

Among other features of the hallucinations, my cases show that the following functions were involved: visual, auditory, olfactory, tactile, verbal and graphic. Their relations to the great association center of Flechsig and the rôle played by the latter was mentioned above.

A third interesting observation is that every patient of all three groups presented a history of marked pathological emotivity, viz., affectivity. Bleuler included into the latter term feeling, mood and emotion of all degrees. He also very aptly says that thought and action are the resultant or symptoms of affectivity. How obsessive ideas or obsessive hallucinations will develop in individuals with a pathological affectivity can be readily explained if we accept the conception of "complexes" so thoroughly worked out by Bleuler, Freud and Jung. I mentioned above the failure of the sensory and the psycho-sensory doctrines to explain the manifestations observed in my cases.

Finally, the last important feature of my study is the transformation of obsessive ideas into delusions. The latter developed from all the elements of the obsessions or of the obsessive hallucinations. Such transformation occurs when the obsessions are old and intense, when the controlling power of the conscious ego is weakened. We then see the obsessive thought becomes incorporated into the personality and is consequently no more conscious. The conscious idea becomes unconscious, viz., delusional.

It will be also observed that the obsessions in these cases are in the form of hallucinations. Whether such a variety of obsessions render the transition into delusions more certain, it is difficult to say, although such was the case in every one of my eight cases. In my former contribution to the subject (see above) hallucinations were absent.

THE ASSOCIATION TEST AS AN AID IN DIAGNOSIS.

BY WILLIAM RUSH DUNTON, JR., M. D.,

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The mental examination of a patient is at all times a serious matter. Usually a great deal depends upon its result, sometimes the breaking up of a home, at others the temporary banishment of one of its members or some other more or less serious change. For this reason it must be taken up very carefully and on account of the numerous points which must be investigated it is apt to be much more prolonged than the ordinary physical examination. Usually we cannot expect to accomplish very much in less than an hour and it is often necessary to go beyond this. In such cases it may be better to divide our examination in order to lessen the strain upon the patient. It may be, however, that this is impossible and what is most likely, our own time is limited and we are forced to do the best we can with what we have at our disposal. Any procedure which will shorten the time of the examination and give us a maximum of information with a minimum of effort is welcomed by all of us. The association test as elaborated by Jung seems to me to be a most valuable adjunct to psychoanalysis. Yet even this consumes time and when we are examining a dispensary patient with the knowledge that we must see three or four more in the hour at our disposal, we are tempted to let this test remain until another time. In fact, under such unfavorable circumstances some one is bound to be slighted.

Then, too, in our hospitals for insane, with a large number of cases to be cared for by a small staff, it not infrequently happens that a physician is swamped by an influx of new cases, the examination of whom he feels must be made promptly, even though superficially.

Recognizing the value of the association test, I began to experiment several years ago with the idea of determining if the test could be abridged and yet remain of value. At the outset it was evident that the knowledge of the patient's content of conscious-

ness, which the test is designed primarily to bring out, would be diminished proportionately with its length. I feel that my results have been interesting and while narrating them would like to call your attention to a few points of general interest concerning the association test. The technique of its application is practically the same. It usually requires two besides the subject, one to record, the other to observe, and personally I usually have a stenographer to record while I manipulate the stop watch and call out the words. In my abridged test I have used but ten or twenty-five words from lists which were formulated by Dr. Farrar, Dr. Meyer, Drs. Kent and Rosanoff, and one or two others. In a considerable number of these experiments no attempt has been made to interpolate significant words, which can very easily be done if we have some knowledge of the patient's history. At other times, when I have not had one of these lists with me, I have chosen words at random to separate a few significant words. Naturally by the use of such a limited number we diminish the probability of presenting significant words; that is, words which cause a delay in reaction time by reason of stirring up some complex in the patient's consciousness.

In certain cases, where I have made a special list of words and have interpolated significant words in it, it has been possible to discover complexes with a number even less than twenty-five, but this at times has merely served to prove the history rather than discover anything unknown. My reason for not interpolating significant words more frequently is that I was desirous of subjecting the test to as severe a trial as possible, but naturally the value of this brief form of test is enhanced by so doing, just as its value is probably greater when there is a repetition of the test. This I usually omitted, as a ten-word test is too short to bear an immediate repetition and I was also desirous of estimating the value of the test without it.

The normal reaction time of two seconds, or ten-fifths, was adopted as a standard and it did not take me long to conclude that in this brief test the reaction time is probably the most important results of the test; that it teaches us more than anything else, and this has been rather interestingly confirmed by two students of Vassar, one of whom, Miss Washburn, tried to discover in the record of each experiment without looking at the

reaction time which of two objects had been seen by the subject. Out of fifty-two results, she was correct in thirty-four, incorrect in sixteen, and it was impossible to determine in two. She says: "Evidently reaction time alone is a much safer guide than the character of the association alone."¹

Taking into consideration reaction time alone I feel that the test is a very valuable one, but it must be remembered that while we are getting this we are learning much more about the patient. We observe the emotional reaction and his manner of thinking as well as other things which are very difficult to record, but which give us an impression of the case which we immediately seek to prove or disprove by further investigation.

I think that the following case abstract may make the above quite clear.

CASE I.—A young woman, school teacher, aged 28, single, was admitted to the Sheppard and Enoch Pratt Hospital October 1, 1910. Her father had died January 17, 1910, and the patient continued to live with her step-mother and the latter's children, with whom she was somewhat incompatible. In April they went away leaving her alone until August, when her brother joined her. He found that she did not sleep well. September 5 she resumed her school work until the 19th, when insomnia returned with depression. She stopped teaching after a few days. Suicidal ideas were present. With this meagre history the impression made by the patient was that she was a case of depression and this was the consensus of opinion at conference, October 31.

An association test made October 7, 1910, was as follows:

Word.	Time.	Reply.
1. Head	34	My head
2. Green	8	Tree
3. Water	12	(Not understood)
4. To prick	7	What? To prick?
5. Angel	9	Dead
6. Long	54	Can't think of anything
7. Ship	10	On the water
8. To plough	5	Field
9. Wool	6	Dress
10. Friendly	12	People
11. Table	12	To eat
12. To carry	15	Burdens
13. Insolent	18	Boy

¹ Some Tests by the Association Reaction Method, Hazel M. Leach and M. F. Washburn. *American Journal of Psychology*, V. XXI, p. 162, 1910.

ASSOCIATION TEST AS AN AID IN DIAGNOSIS

	Word.	Time.	Reply.
14.	To dance	12	Pleasure
15.	Lake	5	Water
16.	Sick	14	People
17.	Proud	10	Woman
18.	To boil	8	Water
19.	Ink	8	Black
20.	Angry	8	Clouds (A gray day)
21.	Needle	7	To stick
22.	To swim	6	Fish
23.	Journey	7	The ocean
24.	Blue	5	Sky
25.	Bread	8	Flour

While the probable mean reaction time is 8, or below normal, it will be noted that there are a number which are prolonged. In this experiment words 3 and 4 must be discarded from our consideration. As to 1, it is not uncommon to find a delay on the first few words given. Words 13 and 17 were believed to have some unpleasant significance, but no attempt was made to bring it out. The reply to 21 was believed to have been suggested by 4, possibly showing perseveration. That to 5 was probably due to her father's death. The remaining replies are normal. Replies 10, 11, 12, 14, 16 are normal except for a slightly prolonged time. The reply to 6 was the most important thing elicited in the examination, and led to further questioning, from which the opinion was gained that the case was probably one of dementia præcox. Later observation served to confirm this, and the patient was transferred to a state hospital, where she now is.

Recently I was called to a general hospital to see a case in consultation. A young woman of 26 had about ten days before met a young man who had previously been employed by her father and been discharged for insolence to her mother. She had not seen him for two years. An engagement to marry was immediately made. That night she went to a Crittenton Mission Home and the following morning sent word to her relatives and affianced where she was. Doing this to prove the latter's love. Her history in the hospital gave the impression that she was suffering from acute mania and my questioning seemed to confirm this, but a brief association showed a prolonged reaction time and a poor quality of replies, so that a rather guarded opinion was given. It being believed that the patient might be suffering from dementia præcox, subsequent observation has confirmed this.

Briefly stated, I believe that this abridged association test may indicate mental defect as shown by the feeble-minded or by pre-

cocious demented more quickly than by any other means of examination.

I was greatly interested in a series of these tests which I made upon nurses with the idea of getting controls. All of them were young women whom I had known for some time and I was greatly surprised to find how their general reaction to the test was so exactly according to their personal characteristics.

I do not wish to leave you with the impression that I regard this test as more than an aid in diagnosis, but I do regard it as being most suggestive of the patient's condition. Mental retardation may be the result of so many conditions, that alone it does not mean a great deal, but the character of the patients' answers and the emotional reaction are most important.

I feel sure that a brief trial of this test will prove to you its value.

THE FATHER COMPLEX.

By HELENE J. C. KUHLMANN, M. D.,

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When the first cases of the so-called Oedipus or Father Complex were published, the subject seemed very startling and aroused considerable scepticism in the mind of the reader. On studying cases more carefully, however, from an unbiased standpoint, the conviction was gradually forced upon the observer that such a complex did exist; that the development of the abnormal mental condition in the cases presenting this picture dated back to early childhood and went hand in hand with the general development of the individual, was, therefore, distinctly fundamental.

In the analysis of the cases, care was taken not to suggest anything that might influence their answers, as it was felt that in all the suggestibility was considerable. The facts presented are spontaneous statements on the part of the patients obtained by the process of association.

The first five cases of the series would seem to be of the Oedipus type. The last three are contrast cases. Case VI, while subjected to similar damaging emotional influences during childhood, shows an entirely different reaction type, possibly because the makeup is different. Case VII, as does also Case VIII, shows an emotional disturbance as an episode in the life history of the individual, and, because of this episodic instead of fundamental character, of better prognostic import. This in spite of the fact that there are poor hereditary factors in both cases.

CASE I.—J. R., æt. 35, born in Germany, wife of a laborer. *Temperate* according to husband. *Patient states, however, that at five years of age she was profoundly intoxicated* after drinking a large quantity of brandy which she was bringing home. Since reaching adult life has always drank some beer but no whiskey until the past year. Since then while working hard, doing extra laundry work, she has taken a drink of whiskey repeatedly during the day. Cannot state exactly how much she has taken.

Family History.—Little information obtainable from husband and niece. The only sister of patient is of small physique and very nervous; otherwise the family history is negative. Her only brother died from exposure to cold.

Personal History.—Nothing known of childhood or early life. Married at 19. She has had two children, fifteen and nine years old, respectively. According to husband she lived a normal, happy married life.

Onset of Psychosis.—Husband states that *attack came on gradually without known cause a year ago, but niece*, who is about thirty years old, *states that patient has been "queer" as long as she can remember.* When told anything would interpret it with a wrong meaning and then become irritable and scold. Always complained of neighbors persecuting her; if they laughed she thought it was at her expense. Thought the same of strangers walking along the street. Would become disturbed and complain whenever neighbors wore new clothing, hats, etc. Thought they wore these to make her uncomfortable. Always was suspicious, frequently visited fortune tellers and gave their ideas credence. *She was not considered insane, however, until about a year ago.* At this time *she went to look at three new pipes which had been placed in the church* of which her husband was sexton. *She claimed that she saw six pipes instead of three.* When told that there were only three, she was very much startled and could never be induced to enter the church again. *Shortly after this she became agitated every few days for periods of one and one-half to two hours* when she would punish her children unnecessarily, quarrel with neighbors, and throw things about the house. Complained that neighbors were constantly insulting her and were going to do her harm. During lucid intervals apologized to neighbors so that they became quite tolerant of her outbreaks which were gradually increasing in frequency. *In January, 1912, she had two gynecological operations.* Upon her return from the Hospital she stated that they had tried to kill and butcher her. *She then became what the niece calls "religious struck."* Would pray for several hours every day. Discharged the servant and quarrelled with sister-in-law who had come to help her. Would not allow niece in the house, saying that she feared she was to be bewitched. A few weeks before commitment thought neighbors were trying to burn the house. Punished the children so severely that husband feared she would kill them. Appeared to have hallucinations of sight and hearing; carried on stormy conversations with neighbors who were not present. Heard rapping at doors and crowing of roosters which frightened her. Also probably had hallucinations of smell. Claimed that she had known of deaths which she heard or read about, by a peculiar odor which she had experienced. Developed a peculiar laugh. Complained that she couldn't get her house clean and would show imaginary dirt. Refused to drink coffee, believing that it contained poison. She was brought to the hospital because the neighbors feared that she might do violence to them.

On admission, September 9, 1912, she is pleasant and affable; cooperative. Volunteers little but answers questions fully and at considerable length—rather diffusely at times. Asks us to send her home to her children as there was no reason for sending her here. Weeps when speaking of her children but as a rule only momentarily.

She is coherent and uses no unusual expressions, but there is at times considerable confusion of thought. Is fully controlled by delusions of persecution on the part of her neighbors which she considers entirely unwarranted as she herself has always tried to do right. Through the influence of these people, especially a Mr. N., everything is changed, seems unreal. Husband appears unreal and it seems as if she were continually living with different men. Feels herself constantly influenced and interfered with in her actions by these people. Starts to do things in a certain way and suddenly has to do them the opposite way. Is afraid to take a bath because she imagines that men are watching her. Her mental condition appears analogous to a waking dream state in which she sees her whole life come before her in a series of pictures which she describes very vividly. Also sees strange things—people among the leaves of trees, among the laundry on clothes lines, etc.—which is brought about through the influence of her neighbors. Some of these things amuse her; others distress and confuse her.

She gives the following account of her life and development of her trouble:

Up to twelve years of age her life was an easy and comfortable one as her father was fairly well to do. At this time, the father was sent to prison for having insulted the teacher and according to patient was accused unjustly of misleading children. After that they were very poor, she had to beg her bread and had to work very hard—never had any luck from this time on. She was the favorite of her father and until he went to prison, i. e., until she was twelve years of age, she and her sister slept with him during alternate weeks. She denies incestuous relations but during this time she had frequent anxiety dreams when she felt herself suspended in midair. At five years of age she had her first hallucination of sight. Saw her father standing beside her bed in his undergarments, looking intently down at her, his right hand raised to Heaven. She knows that she was awake at the time and that her father was absent from home.

At thirteen she went away from home to work on a farm of Major V. Kotten near Stettin. During the first year had to work very hard and was treated harshly by the overseer. During the next two years, after injuring her hand, the major and the new overseer, a Mr. Brown, treated her with unusual kindness, made her work very easy and singled her out generally from the other servants. Both the major and Mr. Brown resembled her father and in her mind they are a composite picture of her father. As she (patient) has the same high brow as her father and the major, she thinks she must be the major's daughter especially as she heard it said that her father's name was engraved on a silver cup in Berlin and because her father always wore a high hat and kid gloves.

Sometimes she has thought that the major was really Emperor William II on account of the major's receiving a letter from the emperor which she believes to have been the one she wrote to the latter asking for her father's pardon. She therefore thinks that she may be the daughter of the emperor. *Since coming here, she has noticed that Dr. H. resembles her family physician in Tonawanda; that they both have brown eyes like her father and that they must be relatives of hers; has thought that it may be a case of* RESSURRECTION *and that her father may have come to life again.* She states that her father *died before she left Germany* and that she *was afraid to touch his body* when her mother asked her to help her with it.

At eighteen she came to this country; went from New York directly to Tonawanda and worked as a domestic until her marriage at nineteen. Was not very successful, people treated her badly and she changed places frequently. While staying temporarily with distant relatives, named N, the husband, i. e., Mr. N, *assaulted her sexually*. She worried considerably about this and thought of suicide. *Married her husband at nineteen* after a short acquaintance, *not so much because she loved him but because he resembled her father, having like him a crooked nose.* Against her wish she had sexual relations with husband before marriage, and has never been happy with him as he didn't seem to care much for her and she thinks he was not true to her although he provided well for her and the children. She always tried to do her duty toward him.

Nine years ago they moved into their present home, and ever since then she has had considerable trouble with the neighbors. They have tried to annoy her in various ways, are an uncleanly and careless class generally and she has felt that they had a corrupting influence on her children, but there was no acute trouble until her return home from the hospital in January.

Since the hallucination of seeing her father, when five years of age, she had had, until the present outbreak, an occasional hallucination. Seven years ago saw husband standing in the doorway while she was coming from the woodshed. Remembers distinctly that he was away from home at the time. Four years ago she saw standing in front of her door, two little girls who suddenly changed into one grown-up woman in a phantastic dress, resembling somewhat her neighbor, Mrs. H. This sudden change frightened her and she didn't get over it for some time. Several times while working in the church she has heard footsteps overhead and behind the piano, and on looking for the person found no one there.

Since her return from the hospital, in January, everything has seemed changed—things undergo rapid transformation before her eyes. Her husband looks different at various times so that she is afraid to be with him, fearing that she is really living an immoral life with many men. She feels herself continually interfered with in her actions so that she doesn't know what to do. Feels that she is constantly being watched and that something is going to happen to her. *Believes that all this change has been brought about by Mr. N., who seduced her before her marriage and who has made fun of her and accused her of being an immoral woman.*

She describes the following visions which she had in the waking state before coming here:

Seven weeks ago saw the daughter of Mrs. H (her neighbor) hang out the laundry. Suddenly, while looking at it, she saw suspended among it, Christ on the cross and on each side the crucified thieves.

Another day *saw* this same woman stand beside a *corpse*, covered with a sheet. The woman was crying and the coffin was surrounded by a number of men in high hats who made speeches. *It seemed to her that the corpse was her father's body.*

More recently (also in the waking state), she thought she was in a cemetery; somebody looked over the fence to see whether a body had been brought there. She cannot describe the appearance of the person who looked over the fence.

Another day *it seemed to her as if a corpse had been found in Germany* in the place where her father, and she (when a child) had eaten their lunch. *It seemed to her as if her father had been accused of having killed somebody*, and as if the daughter of Mrs. H. had been in that place during her recent visit in Germany.

She states that she *never heard actual voices but heard sounds* as if someone were going through the rooms in a silk gown. Has several times *smelled the odor of a corpse* which was a premonition that someone was going to die. *Smelled odor of musk* in her clothing.

In addition to the dreams in the waking state, *she had a number of vivid dreams while asleep.*

Dreamed that Mrs. N. (the wife of the man who seduced her) lay dead in a casket in her (patient's) room.

On the ward she *describes the following scenes which are vividly enacted before her on the wall, door and window.* Narrows her eyes to distinguish them better and often laughs, when she sees something that amuses her. *She sees them only with the EYES OPEN.* Sees birch trees which she remembers as being near her old home. Sees a table at which a woman is seated. Four other women in white and without hats are seated on the bank. A man seated near, is talking to them. Among the women in white there is an old woman who seems ill. A man with a perruque, like an old noble who may be George Washington, looks on. Then there is a picture of a young girl who is bringing a cup on a tray similar to that on Baker's chocolate. There are some ladies in crinolines who are getting out of a carriage and are talking to the gentlemen. Among the women in white she sees a baby carriage. The old woman who seemed ill, appears to be holding someone. A man kneels before her; the old woman stands up and looks down at him. A woman with parted hair seems to hold a child; *this woman seems to change into a man.* There are flowers and trees which seem to contain people. A soldier in white trousers seems to change into a baker, then into a butcher or a butler. The woman who comes out of the carriage seems to carry a child and is received by another lady. There are trees on one side, *a casket covered with flowers on the other. The casket disappears and IS REPLACED BY A YOUNG*

WOMAN AND A YOUNG MAN WHO SEEM TO BE IN A BOAT. An older man seems to talk to an older woman dressed in black, wearing a cap, etc.

As she herself explains, "what she sees is a mixture of what she has seen in real life and what she has seen in pictures." It is a veritable automatism of thought.

The further course showed variable conduct, at times tractable and interested in her surroundings, again unreasonable, complaining that people influence her; noisily demands her release as she is not insane. In course of further analysis stated that she had for years been in fear of Mr. N. That he had repeatedly come to her home and made improper proposals to her and that she felt that he had a strong influence over her.

While at the homeopathic hospital, he had visited her with his third wife. Kissed her hand which she thought entirely uncalled for. She continues to have vivid hallucinations of sight; while describing them she narrows her eyes in order to distinguish them better. Continues to believe in the persecution on the part of neighbors; thinks it terrible that she should have to suffer for their wickedness. Has transferred her delusions to some extent to the hospital. Said that people were constantly talking about her and making reference to their own affairs thus trying to make a soothsayer or fortune teller of her. Heard them say that she was going to die of cancer like her mother. She repeatedly expressed the belief that people read her thoughts. On one occasion stated that for some weeks previous to her going to the hospital she couldn't sleep, felt that something terrible was going to happen to her. One night felt a storm sweeping through her room, saw clouds rushing past her. Thought that she was to be punished for having emptied urine into the sink at home and in the church. Thought God had forsaken her for it. Prayed to be forgiven and opened door wide so that God might enter again.

Physically she showed nothing beyond a cystic goitre and slight anæmia.

Turning now from the manifest to the latent content of the psychosis as obtained by psychoanalysis, we find two trends towards which all her ideas seem to converge—the main trend—the father complex—and a minor trend which might be called the N complex.

For the main trend, the father complex, we have the following:

(a) The anxiety dreams in childhood produced by the faulty moral and mental hygiene—sleeping with the father until twelve years of age.

(b) Marrying her husband not because she loved him, but because he resembled her father, and a persistent disharmony between herself and husband.

(c) The identification of various people with her father and the exaltation of the father's personality and through this to some extent of her own. The feeling that Major V. Kotten for whom she worked as a girl resembled her father; that she might be his daughter or even the daughter of the German emperor because the major received a letter from the

emperor which she believed to be the one she had written to the latter asking for her father's pardon. Identification of her family physician and of Dr. H with her father because like him they have brown eyes.

(d) The men who most frequently seem to assume the guise of her husband are a Mr. R, a man with a crooked nose (like her father), and a dentist in whose office five years ago she picked up a skull, which it occurred to her might have been that of her father.

(e) The recurrence of dreams in which the casket and a corpse figure prominently, the corpse frequently resembling the father, e. g., the day dream of a flower-covered casket among the trees, the casket disappearing and being replaced by a young man and a young woman in a boat (the father and daughter?). The vision of a neighbor's daughter (who had recently visited patient's birthplace in Germany) standing beside a coffin which seemed to contain the body of patient's father. Again dreamed that last summer a corpse had been found in the place where she and her father had eaten lunch together—the frequent odor of a cadaver.

(f) The frequent smelling of musk which is found to be associated with yellow flowers that she saw in the garden of a Mr. W, a friend of her father's whom she visited one day when a child, in company with the father.

(g) Fear of touching father's body after his death.

(h) Finally the evident identification with the mother in that she hears voices in which she is told that she is going to die of cancer, the same disease that caused her mother's death.

For the N trend we have the following:

(a) The fear of him; and if we consider fear as an inverted wish we will recognize at least a certain attraction towards him which is evidently greater than her attraction towards her husband. We know from her statements that she has had from time to time relations with this man for which she disclaims responsibility but attributes it to his influence over her which she cannot resist.

(b) The dream she had of seeing Mrs. N dead, in her, i. e., patient's, room also probably a vague wish realization.

(c) The fright she had over the pipes in church and the hearing of footsteps, etc. Her association of this is as follows: She had heard her husband, who is sexton of the church, say that women came to see him there. While disclaiming any feeling of jealousy, she remained in the dark church for an hour watching, in order to see whether anyone really came to see the husband. She thought she heard footsteps and evidently was disappointed that nothing happened.

This we are probably justified in interpreting as a wish to know her husband unfaithful as in that case she would have something to balance her own indiscretions.

During her eight months stay at the hospital she improved considerably; became gradually more manageable and more amenable to reasoning,

showing generally more self-control, but her underlying delusional trend remained essentially unchanged. Husband considered her so much better that he wished to try her at home and, having removed from the old neighborhood, he was finally allowed to take her early in May. While he reports that she is doing well at home, she will undoubtedly have to return to the hospital sooner or later as the delusional trend is fundamental.

NOTE.—March 2, 1914. Patient was returned to the hospital in July, 1913, thoroughly controlled by her old delusions and continues so at the present time.

CASE II.—Aet. 32, single, daughter of well-to-do American parents.

Family History.—Father very nervous, a hemiplegic at 63. Temperate in habits. One paternal aunt extremely nervous. Mother's people normal. There were three children in the family of whom patient is the youngest. One brother dead; the brother who is living is quite nervous.

Personal History.—Received a good high school education and found study easy. Worked as a stenographer for a short time but had to give it up on account of her nervousness and fear of men. Latterly has done some greenhouse work and gardening. She has been under the care of several physicians for her nervousness and was sent to the writer by one of the neurologists in the city, as he thought that on account of her fear of men, a woman might possibly be able to do more for her. She is a well-developed, intelligent looking woman in excellent nutrition. She seeks relief because she is absolutely unable to hold a position or enjoy the ordinary social relations because she is selfconscious before people on account of her habit of masturbation and because she persistently sees men naked before her. Is in constant fear that she may commit some immoral act.

She gives a *history of a warped emotional life dating back to early childhood, and in which the father complex evidently plays the leading rôle.* Her account of her life is as follows:

As she was the youngest child and very nervous, she slept in the same room with her parents, often in their bed until seven or eight years of age. When seven, she remembers accidentally touching the father's genitalia with her foot and felt an intense disgust from that day. *Menstruation was established at twelve and about this time she developed a horror and fear of her father* which has persisted; couldn't bear to be near him and during his long illness couldn't bear to touch him. At 14 developed the habit of masturbation which she has kept up to the present time. She never felt comfortable in the presence of boys and at 18 she commenced to see the male genitalia before her and also had visions of sexual relations; read a great deal about sexual matters as she had a great curiosity about them. At 19 she went to consult an oculist whom she shortly told of her habit. He assured her that he could cure her by hypnotism which he was in the habit of using to some extent. He hypnotized her two or three times and the second time she found his arm around her; the next time he kissed her. She realized that it was not right to allow him to do this;

felt ashamed and yet could not resist. She was in love with him as she expresses it and went to him two or three times a week for four years. She frequently allowed him to kiss her but never had sexual relations with him. She was always afraid that she might yield in the end; felt thoroughly ashamed of herself but did not have the will power to remain away. After four years she finally did stop going to him but always had a desire to return. She has worked in offices from time to time but never could hold a position, because she would soon become afraid of the men; felt that they must read in her face her sexual thoughts and constantly feared that she might become an immoral woman. At times when overpowered by her nervousness she has felt that she would like to run naked across the park and scream.

In the course of the analysis she expressed a number of phobias for which the explanation was obtained principally through letters as she seemed to be able to associate better in this way than in the presence of examiner. She expressed:

- (a) Fear of dead people.
- (b) Fear of the dark and water.
- (c) Fear of fire and water.
- (d) Fear of ghosts.

She also *had a number of obsessions*:

(a) During interviews she often looked critically at the bricks in the wall as if searching for something.

(b) In the midst of interview would ask to be silent for a minute, whisper to herself, and then go on with the conversation.

(c) She had the habit of taking, when nervous, foolish little steps, as she expresses it, counting fingers and looking for things on the floor, the worst being the looking for things on the floor, which made her most nervous.

(d) Saying certain words, especially, "God—Christ—um," over and over, never being satisfied that she had said them quite right or the correct number of times.

I will give the various associations in patient's own words as obtained from the letters:

(A) *Fear of Dead People*.—Association: After the death of my brother I dreamed of deaders every night for a year and a half. It was always night and usually I was wandering about the cemeteries and falling into open graves. One night I dreamed of someone knocking at the door and when I opened it, there was a dead man thrown at me. Another night I went such a very long way through such dreary places and finally was left alone in a room with a deader. They feel so cold and funny. Just like meat. And if you look at them for a few seconds they move and if you stay in the room a few minutes near them you get such a horror that if you didn't get away something would happen.

(B) *Fear of the Dark and Water*.—Association: If I ever should have to remain in the dark all night alone, I am sure I should be insane in the morning especially if water ran through the pipes even half the time.

Since I grew nervous I dreamed a great deal about water and there was always the idea of fear associated with it. It (the water) was always very dark and sometimes running very swiftly; often it was night and I was at the Falls—sometimes above, sometimes below. I don't believe I ever went over them but I was at the brink pretty often. And I was forever falling in my sleep in those days. And now I am afraid of the water still but more afraid of those little waste pipes that are supposed to carry off the water in case it flowed too fast and overflowed. What is in them? I think it would be an ideal place for all the things I am afraid of. Where do the pipes go? They are an uncanny lot of things. There is something uncanny and terrible about the whole subject to me. There is so much mystery connected with it. Think not only of those comparatively few little pipes in our cellar but of where they lead to and of all the network of pipes that underlies the whole city. Jean Valjean came upon the body of a dead man. I think he bumped against it when he was going through the sewer. And the water, it comes from out there in the lake where it is so terribly deep and where so many people have been drowned. And how dark and horrible it is there at night. The ghosts would have a very good time. That man in prison who took the dead man out of his shroud and carried him into his own dungeon and fastened himself into the shroud and allowed himself to be thrown into the sea at midnight because that was the way they buried prisoners who died and the scream he gave when he struck the water. I am afraid of deaders and ghosts more than of anything else.

(C) *Fear of Fire and Water; is intimately associated with the obsession of "looking for things on the floor."*—Association: The doctor who hypnotized me, wrote me several letters. They have been burnt for years. I knew I didn't have any right to have any letters from him and so they worried me to pieces. And while I did have them I was always afraid I would put them some place where they would be found and be read by someone. And when I was very nervous, I used to spend a good share of my time looking for them even after I had burnt them. I used to see them everywhere; on the sidewalk, on the walls of the church, in the trees and in just any place. That is why I am always *trying to find whole bricks* in the walls of the rooms where you talk to me and to find whole little grains in the woodwork and I'm always looking for whole things all the time. I don't know why it rests me to find whole things but I couldn't stand it if I didn't. Even now I am still looking for those letters. If I am very nervous, they insist upon being picked up. They are always worst at bedtime. And they have mixed themselves up with turning off the water and with being afraid that I have set fire to something. I get almost under the kitchen range and crawl around in other foolish places during these times. Would you expect to find fire at the bottom of a bureau drawer? *Those letters have turned into little points of light.* I see the lights and I've got to look at them and pretty often feel of them and yet in some way it is the letters I'm seeing. The letters came first and then

they switched off to lights and to water. I don't want to set fire to anything and I don't want the water to run over and spoil the plaster.

(D) *The Fear of Ghosts*.—Association: I ran into a ghost last night right outside my door. I know there aren't any ghosts but I see them anyway. There is one that stays downstairs all the time but if I go out into the upper hall he either comes up a little way or twists his body around the edge of the bannister and grins at me and teases and frightens me. I don't look at him but I see him anyway. *Maybe it is the ghost of Dr. X* (who hypnotized her). In fact I'm sure it is. There are arms, not exactly arms, because they are ever so many feet long, that stretch out for me from below.

(E) *Obsession of Repeating Certain Words* especially "God, Christ, um."—Association: When I am very nervous, no question can be answered until certain words, especially God and um, which are the most troublesome, have been said enough times or in such a way as to suit me. And I can seldom stop even when I promised I would say them only once.

There used to be a severe pain in my head; it felt as if everything in my head were drawing towards one point in the center; then I would say things over to myself until I would grow frantic and scream and pound my head on the floor and wall. After that there would come a dull time when I couldn't think of anything and would drone over and over "um." Since then the pain in the head would return whenever I say that word over 8 to 10 times. If the "um" is the name for the pain in my head, it is also the name for my greatest unhappiness (the habit). Some people groan when they are in pain and as there are different groans for different kinds of pain, perhaps my sound expresses mine.

I am often so taken up with *those little things that say themselves* that I can't talk very much and then people think that I am stupid.

Why is it that when I really turn to Him (God) that things are worst of all?

I wish I could really pray but it has been the source of a very great deal of unhappiness. The only way I can pray and keep my nervous balance is by saying words and the worse I feel the more carelessly I have to say them. I can't get along without it at all because such religion as I have is all that has kept me from suicide and from doing wrong. And when I pray really and genuinely and beg and beg for deliverance from my trouble, then everything goes to pieces. And that is how God came to be one of my words that I say so many times over and over. It began by praying so hard for help on Communion Sunday and then I couldn't stop and I pounded my head on things and so God and "um" went together in my mind.

My greatest worries for years have been the habit and religion and my unkindness to my father. The worry about religion was the worst because if that could have been straightened out, then the strength of religion would have enabled me to do what I ought in the other two matters. And besides, if *He is your Father, but has turned away* because you are so bad and cannot be better, you feel pretty badly because He doesn't care.

The point is not, I suppose, whether or not all this is narrow or irreverent. It is only that *these are the things* that I have been thinking about.

(F) *Obsession of Taking a Certain Number of Steps*.—Association: I take the steps because there is something in me that is afraid all the time just of almost anything and everything. It seems to me that if I take those steps enough times just right—only they seldom do get taken just right to suit me—and say the things to myself that I do say at those times, those steps and words will ward off the trouble (habit).

In analyzing the various fears and obsessions we can obviously refer them to three different complexes:

- (a) The leading one, the father complex.
- (b) The X (the oculist) complex.
- (c) The brother complex.

For the *father complex* we have:

1. The fear of him, developed at puberty.
2. The fear of water (as will be stated below).
3. The identification of the earthly and heavenly father with the obsession of saying "God" and "um," plus portions of all the other fears and obsessions.

For the *X complex*: The fear of ghosts.

For the *brother complex*: The fear of dead people.

While she was under observation, it soon became evident that there was present also a *strong homosexual trend*, evidenced by her extravagant language about her attending physician. When she was cautioned not to become too dependent upon her physician, that the aim was to train her to a wholesome, independent condition in life, she wrote as follows: "I don't think that I shall ever get into any such trouble again as I did when I was between 15 and 17. At that time I was for several years deeply and hopelessly in love with my Sunday school teacher. It was while I was caring so strongly for her that I grew self-conscious and began to wonder all the time what people were thinking and saying about me. Before that I was as independent as need be but since then I have always felt that I must have someone to depend upon." Later she confessed that women had exactly as much attraction for her as men, except that she was not afraid of the former.

She also showed what so many of these patients show, and what makes their treatment often so unsatisfactory, namely, *an absence of any real desire to get well*; they are evidently well satisfied with their abnormal mental life in spite of their makebelieve efforts to change it. She had written on several occasions: "I know I am very, very bad; I know what is in me. I THINK myself that I am pretty good but I *know* I am not. I don't half try. I cannot wake myself up and most of the time I don't want to." When during one of the interviews about the middle of the treatment period after considerable analytical and reconstructive work had been done, she calmly told me that she didn't really want to get well and that anyway she didn't know what I really wanted her to do (although her letters showed that she had grasped things very well) I gave her,

figuratively speaking, a severe mental lashing. I told her "that I wanted her to try to live a decent mental life. That it was perfectly disgraceful for her to say that she was satisfied with the kind of mental life she was leading as she had just confessed. That while, as I had said before, she was not responsible for the early development of her trouble, it was her duty to at least work and try to get out of it. That I had no time for her unless she gave up being mentally lazy; that if she were really willing to work I would continue to help, otherwise she needn't come to see me again." She looked at me in pained amazement, saying that no one had ever talked to her that way before. I replied that I was well aware of it but that I meant every word I had said. I of course never expected to see her again but to my astonishment she wrote me a letter a few days later in which she stated that she realized the justice of what I had said and that she would really try to work.

As a matter of fact she did much better from that time on. She evidently needed just that discipline apart from the analysis. *She also showed the great selfishness and total lack of altruism*, the result of poor training, which made it difficult to get her interested. In this connection she wrote: "I cannot do things for my people. They have always taken care of me and done a great deal more for me than they should have done and, sick or well, they have worked for me and I want them to continue to do so. If they all die—and there is very solid ground for my anxiety about them—who is going to take care of me? Who is going to get me all the things I've been having? If they die the only thing I can do to earn my living is upstairs work or something of that kind—noble ambition, isn't it? And I've felt quite sure that no one would keep me long because I scream so sometimes. I want everything for myself. Selfforgetfulness and self-sacrifice have had absolutely no part in my life. It is ME all the time. There isn't a single other thing I really care about." After the disciplining she worked really very well, i. e., for her. Being decidedly intelligent she was able to grasp the elements of the analysis and gradually became less uneasy although she had her bad days. She took a short course in gardening at Cornell and did considerable good work in her own garden. She also learned to become more altruistic in her general attitude. About three months ago after not having seen her for about four months, she wrote me a closely written twenty-page letter in which the nucleus of the whole trouble was very clearly revealed. The statements are too frank and concrete to be repeated but in substance she said that her mother, not being well at any time when she was a child, her father assumed the care of her and attended to her bodily wants including defecation and micturition. She adds: "My mother didn't know it made any difference, I am sure."

She then speaks especially of an occasion when her father thus cared for her in a public toilet in an office building where there were pipes and tanks and certain appliances which she had not seen at home. She ruminated about them and finally connected them with the genito-urinary system concerning which she later read considerable in her brother's medical books.

so that she had quite an exact knowledge of these matters. This explains the phobia about the water and the pipes and shows that it all belongs to the main complex. The water also had a relation to her habit. She "hated, loathed and abhorred" her father most when he went to the bathroom, because it made her uncomfortable and she said "um" over and over in order not to think of anyone in the house especially her father when she did what was bad because "he was the last person in the world she wanted to think about in connection with bad things."

She also shows in this letter that she had a certain attraction towards the brother who died although it was not as pronounced as the attraction towards the father.

After the writing of the letter she called at the hospital to ask physician whether it were really possible that her abnormal mental state could have arisen out of the happenings that had come back to her memory while she had written the last letter. She was told that such was indeed the case and that it was just these faulty factors in the upbringing of children which physicians were cautioning parents against at the present time. She discussed the situation in a very intelligent way, realizing the danger that some children ran in this way, and her manner which formerly had been furtive and uneasy was much more straightforward and normal. She stated that she was doing considerable work at home and in her garden and while she had not as yet been able to break herself of the habit, she was not as confused and disturbed mentally. She asked whether there were any local measures to cure the existing condition and when told that, as the habit had in her case a mental origin it must be overcome mentally, but that the alcohol injection of the vulva might be done as a last resort, in case she did not succeed, she felt much relieved and promised that she would continue to work and try to get better. I have not seen her since that time but have no doubt that I shall hear from her in the near future.

Although this patient is far from well and of course never will be entirely normal, she is certainly much better than she was when she first came. At any rate she has been kept out of an institution where she probably would be an almost impossible patient, especially if committed. She evidently has at times a great desire to give way and let herself go, for she wrote in one of her earlier letters: "I have thought that there might be a possibility of my going to the insane asylum to stay, perhaps forever, and I would like that better than anything else in the world, ever so much better than a trip to Europe." She asked repeatedly about the advisability of going to a hospital for the insane but I always advised strongly against it as that would probably mean in her case the end of all effort. While the analysis of the mental content in a case of this kind is an extremely repugnant affair, the question is not, whether we find it disagreeable to wade through the mire but that, as the patient said about her religious thoughts, these are the things this class of patients think about and these are the thoughts which underlie their fears, obsessions and symbols. If we are able to alleviate the fully developed condition in the adult even to some extent, there would seem to be some hope of preventing

the development of such an appalling condition by a proper mental hygiene in early childhood. While it doesn't seem probable that a normal child with the proper balancing faculties could get into this condition, we cannot always know which children are the susceptible ones. Through a knowledge of the facts obtained in studying these cases we can warn the mothers of the danger of caring too assiduously and too long for their boys and the danger that the girl runs when the father undertakes these duties; also of the danger of young children sleeping in the room with their parents or in the same bed, for we find that at five years of age the danger is already great. We learn also how necessary it is to instil the lessons of unselfishness and altruism at a very early age if they are to be learned at all.

CASE III.—M. D., æt. 25, American, of Scotch and American parentage; an only child; without settled occupation, daughter of a lumber dealer. Was admitted to the Buffalo State Hospital as a voluntary patient August 23, 1910.

Family History.—Father died at 54 of "meningitis and nephritis" having been forgetful for several months before death, and attending physician feared "brain softening" (syphilis?). Mother impresses one as a fussy woman lacking somewhat in judgment. Maternal uncle committed suicide during an attack of depression. No further history of insanity or neurosis for two generations on mother's side and for one on father's side. Both parents were temperate.

Personal History.—Was born in Buffalo and is said to have been a healthy baby. At two and one-half years of age was hurt in a runaway accident and was unconscious for a short time. No further details obtainable.

When between four and five years of age she complained of being sick and of having a lump in her throat. The condition lasted for three months and during this time she ate no solid food, saying that she was unable to swallow it.

While she finished the primary school at the ordinary age, she had evidently difficulty in grasping the more advanced work. She left high school at 19, before finishing the second year, on account of nervousness. Was considered rather peculiar. Very quiet and reserved; liked to read Shakespeare and novels of a decidedly sensational character. Attended the theater a great deal and wanted to be an actress. Did little work about the house; was careless—had no system. In disposition she was headstrong and was always given her own way. Menstruation was established at 14, occurred at intervals of five to six weeks; was normal in amount but accompanied by some pain.

Onset of Psychosis.—Gradual, about four years before admission, at the age of 21. Mother stated that at this time she first began to develop peculiar ideas and phobias along various lines. Talked much about the microbe theory and at the time of her father's death a few months later, she was afraid to remain in the house, to touch father's body, or anything

her father had handled, fearing that she would develop some infectious disease. *Complained of feeling weak, of having a lump in her throat, and for three months ate no solid food, claiming inability to swallow.* Mood was very changeable.

Two years before admission mother removed from Buffalo to a small nearby town as patient was afraid to remain longer in the house.

In March, 1910, she developed the idea that she had some pelvic trouble and five months before admission had a laparotomy performed—shortening of the round ligaments, exsection of some small cysts from both ovaries and appendectomy. *After the operation she became decidedly worse, more nervous, wanted to be alone; complained of being unable to move; that she was going to die; wanted a physician all the time and begged to have her life saved. Lived on milk and raw eggs, claiming to be unable to digest other food and while under this regimen she gained considerably in flesh, she became progressively worse mentally and was admitted as a voluntary patient on August 23, 1910.* She desired treatment on account of her weak, nervous condition. *Complained especially that she could not get her breath* and feared every moment that she was going to die. Begged us to do something for her to save her. During the night following admission, she was very restless, moaned a great deal and the following morning she immediately told physician that she was dying; asked us to feel her pulse as she knew that it was nearly gone; that she was almost unconscious from weakness. She was panting for breath; said that everything looked different—dim, blurred and indistinct. While her stream of thought was coherent, it was frequently interrupted by statements about her supposed critical condition.

In the course of the analysis she gave a history of an abnormal preponderance of sexual ideas and of certain perversions from early childhood up. Being the only child and mother being sickly, she (patient) was allowed to sleep with the father in place of the mother until ten years of age, when the mother stopped it because she feared that the neighbors would talk. Later she would often ask father to lie down on her bed when she wasn't feeling well. Before ten years of age she already had considerable knowledge of sexual matters from hearing other children talk. When nine years of age a boy of her own age exposed himself to her and she to him and about this time she commenced to masturbate.

When a little older she was inclined to be forward with boys, flirt with them and say suggestive things. At 16, partly through her own forwardness, a boy of her own age assaulted her, inserting a finger into her vagina which she thinks hurt her permanently. She acknowledges that she continued to be forward with other boys, but in spite of this she thought the neighbors were unjust to talk about her, saying that she was a bad girl when in reality she tried so hard to resist temptation. Soon after this she saw a play called "The Power Behind the Throne" where a girl was unjustly accused of doing wrong and she realized what a good name meant; she wanted to be respected and stopped her flirtations but masturbated to a greater extent.

In the year 1904 or 1905 she developed her first phobia. She felt impelled to count to 8 or the multiple of 8, especially while walking or combing her hair; felt that her father would die in case she omitted it. This condition lasted for a number of months and then gradually disappeared. In the spring of 1907, while singing in one of the churches, she met a Dr. X who paid her considerable attention. While at first resisting any intimacy, she later allowed him to kiss her frequently which stimulated her sexually. She was inclined to be late for rehearsals and would have to hurry at the last moment arriving panting at the church and in a nervous state for fear Dr. X would not be there (difficulty of breathing on admission). She didn't really care for this man, was merely fascinated by him and their intimacy ceased after three months. *In the fall of the same year her father died and shortly before his death she developed a phobia of microbes.* Would wash herself three or four times in succession after touching the doorknob or anything else, for fear that a microbe was left on her; in fact her mother had to tie up the soap. She also feared that she would carry verdigris from the faucet and poison the food. When her father died she was afraid to touch his body or his bedclothing.

Soon after the father's death she and her mother removed to a nearby town because the living was cheaper there and because she was afraid to remain in the house where her father had died. A few months later she returned alone to Buffalo; boarded at the home of a friend of her mother's and worked as a clerk in a dry goods store. During this time she answered a matrimonial advertisement because she wanted a friend, feeling lonely since she lost her father. She soon entered into clandestine relations with the young man, going with him to a hotel on several occasions. After returning to her home in the country she would meet him when she went to the city to take her music lessons. As she derived satisfaction through her autoerotic practices, but not through the normal sexual relations and as she repeatedly had pain at this time, she thought she must have some pelvic trouble, hence sought relief through an operation.

Since the operation she has both masturbated and had sexual relations and as she still has pain in one ovary she thinks that she must have another operation and consulted the surgeon about it shortly before coming to the hospital.

She is superficially bright and shows excellent memory and preservation of school knowledge. Physically she is frail and poorly nourished with a high and narrow palate; otherwise nothing noteworthy. Cutaneous sensibility normal—no stigmata of hysteria found. After admission she continued for a time very sensitive; had marked ideas of reference. When she saw patients or nurses talking together, she believed that they were talking about her; thought that nobody liked her; that her brain was "vacant"; feared that she would become an idiot. On one occasion was found crying bitterly as *she was obsessed with the fear that she might kill her mother.* She felt greatly distressed to have such a thought when

she was so very fond of her mother and willing to do anything in the world for her.

She also stated that she had dreamed of stabbing her mother; felt the knife going in and awakened frightened.—*The psychosis is therefore plainly a "father complex" towards which everything else converges.*

We have:

(a) The neurotic condition—the lump in the throat—at five years of age while she was sleeping with her father.

(b) The frequent tendency to feel ill, after the practice of sleeping with the father had been discontinued and during these times asking the father to lie down on the bed. Evidently a desire of substitution for the mother since the mother was ill.

(c) The fear of touching the father after his death or anything the father had touched. An excessive reaction against the subconscious desire.

(d) The incestuous and erotic dreams—the fear of killing the mother, evidently an inverted wish.

(e) The apparent excessive devotion to mother with real disharmony.

(f) The seeking of a substitute—a friend as she felt lonely for the father, and inability to find satisfaction in the substitutes.

(g) The fear of microbes which while probably an expression of her auterotic practices is probably also connected with the father.

It was impossible to obtain any explanation for the phobia of counting to eight or its multiple but it was found that she took the large quantities of milk and raw eggs to increase her sexual desire.

From the first the symptoms were analyzed very freely one by one with the patient and their origin made plain to her. Within a day after admission, she was told that the difficulty in breathing and consequent fear of dying was directly connected with her hurrying to choir rehearsals to meet Dr. X some years ago. The explanation seemed to be adequate as the symptom disappeared completely and has never returned. Whether the explanation is the correct one, I don't know for it may have been connected after all with the leading complex, but at any rate it was effectual from a therapeutic standpoint. She was then gradually shown that her mental distress was the result of an unconscious sexual attachment to her father in early childhood which caused her to seek the subsequent substitutes—that her impulsive thoughts to kill her mother and fear that she might do so showed her subconscious desire to take her mother's place and that her dreams showed the subconscious inclination toward the abnormal attachment; that there was present at the same time the conscious revolt against such relations out of which her disease had arisen. That it was not a sin as she felt it, but an unfortunate development out of circumstances over which she had had no control, and that while her parents were responsible for the condition, they had drifted into it from ignorance and were therefore free from blame.

She cooperated well and was willing to accept our explanations. She improved slowly but steadily. A year after admission she took considerable

interest in various kinds of work for which it had been very difficult to train her. She now was able to go down town without coming back exhausted and no longer thought that people were looking at her. At first she was always complaining of all sorts of ailments, fearing that a serious disease would develop and was continually asking for medicine; but as time went on, she learned to take considerable pride in overcoming minor ailments not mentioning them to physician until they were over with. Her general attitude towards life was a more healthful one and she stated that she slept well and was free from the distressing dreams. Her menstruation became painless and normal. She left the hospital fifteen months after admission in November, 1911, and has visited here from time to time since her discharge occasionally remaining over night. While she is not by any means recovered, she has gotten along very well at home with her mother. There still exists a certain disharmony between her and the mother; she feels that the mother does not understand her but she realizes the situation up to a certain point and is able to make the best of it.

CASE IV.—H., æt. 25, single, American, a teacher, daughter of a well-to-do cheesemaker, temperate.

Family History.—Father had an attack of depression lasting about six months when patient was between nine and ten years old. Was very self-conscious, downhearted; not suicidal. Was cared for at home and has not had any further attacks. Since patient's illness father has often talked to her about his own symptoms. One paternal uncle drank and was considered the black sheep of the family; he went to Alaska and nothing has been heard from him since. All the other paternal relatives are able, normal people. Maternal grandfather was a steady drinker and often intoxicated. Her only maternal uncle has always been intemperate and the son of this uncle is already somewhat intemperate. Both parents of patient are temperate.

Personal History.—She is the second youngest of seven children. When quite small was critically ill with inflammation of the bowels. No other illnesses or accidents. Received a high school education and taught school successfully for several years. Was a hard worker, taking her work very seriously. In disposition was *always quick tempered and very sensitive*.

Onset.—Gradual in February, 1909, six months before admission, when 22 years old. She began to show a disinclination to talk; paid no attention to what was said to her; felt depressed and thought that everyone was trying "to do" her. Believed she wasn't fit to live and had a very bad idea of herself; said she wasn't any good, there wasn't any use in anything and she was going to end it all. Appeared to be in a state of nervous tension, being unable to stay in any one place for any length of time. At times seemed dazed and not to know what she was doing; at others showed great impatience towards her mother; had a sullen, scowling look, darting sharp quick glances from under her lashes; she *imagined that people were watching her* and begged to be alone.

On admission, August 7, 1909, she was mildly restless, fidgeting about, wearing a worried abstracted expression, paying little heed to her sur-

roundings and saying nothing voluntarily. On questioning she made brief and often indefinite statements, averting her head, partly concealing her face with her hands, frequently half smiling, the smile not harmonizing with the ideas she expressed, namely, that people talked about her, assailed her character; that her family had lost all affection for her.

Orientation, mental grasp and memory were found to be good and there was no retardation evidenced except in a lack of initiative. Soon after admission she commenced to improve both physically and mentally and was discharged apparently recovered, seven weeks after admission.

She returned as a voluntary patient on March 6, 1911, the father stating that she had seemed well since leaving the hospital except that she had been more excitable and sensitive than before. Remained at home for a year after discharge and in September, 1910, commenced to teach again. Shortly after that she had some difficulty with her fiancé; found that he was dividing his attentions between her and another girl; commenced to worry about this and returned his letters. Soon after the New Year she had to give up her school as she could not carry on the work on account of her depression and uneasiness; would walk up and down and talk about her love affair; said she wished she were dead and threatened suicide frequently.

Three weeks before admission she suddenly laughed for a few moments, said she had shaken off her depression, was all right now and appeared perfectly well for three days when the depression returned.

On admission her attitude was essentially the same as when she first came to the hospital. She appeared depressed and seemed to be "on a tension." She volunteered little, hesitated considerably before responding to questions, sometimes halted in the middle of a sentence; at times did not answer at all or would say, "I don't know, I can't think; you can't help me anyway." Expressed a general feeling of hopelessness, felt that she had lost the power of concentration; thought that her people had no confidence in her; said that she hated her mother and brother which she knew was wrong. That she had done nothing in her life to worry about except that perhaps she had not attended church as regularly as she should have done. She showed some difficulty in thinking during special tests which appeared to be more the result of preoccupation than actual retardation.

In the course of further analysis it developed that a morbid way of thinking had existed since she was five years of age. At this time she remembers sleeping in the same bed with her mother and father and on one occasion, which made a deep impression upon her, she noticed the father's genitalia while he was exposing himself carelessly during the process of dressing. It stimulated her curiosity; she recognized him as different from herself and her mother and wondered what his relation to her mother was. On one occasion at least after that she remembers being in bed alone with him and experiencing a vague sense of pleasure when he caressed her; she recognized it as different from other feelings. After that the vision of the male genitalia would often come before her and she ruminated considerably about it.

At 14 when she experienced her first menstruation, she had a feeling of intense resentment. She felt disgraced, "dreadfully so" as she expresses it, and even after her mother had explained to her about the menstrual function this feeling of resentment persisted. Soon after, she developed a fear of her father and felt that he had changed towards her. While she had been his pet in childhood, he seemed to have become less affectionate towards her. She craved his affection and yet she feared him. This fear still exists. She also felt that her mother did not try to understand her and she did not get along well with her.

From 18 to 20 she received the attentions of a young man who was *persona non grata* to the family on account of his intemperance. She cared a good deal for him but never quite trusted him. While with him her attitude was always normal but when away from him she was much troubled by "impure thoughts," the vision of the male genitalia, not always associated with any particular man, and she also occasionally imagined herself having relations with her fiancé. She tried to banish these thoughts; was ashamed of them. At the same time *she was afraid of herself*; she wanted to do right but feared that she might be led to do wrong by her other impulses.

In September, 1908, nearly a year before coming here for the first time, she broke the engagement at the instance of her family. Was, however, still fond of the young man, thought much of him and continued to struggle with her abnormal thoughts. In January, 1909, another young man, to whom she was affianced until shortly before her second admission, began to pay her attention, but it did not make her happy. She felt that on account of her impure thoughts people were looking at her; that her girl friends treated her differently from others and she obtained momentary relief only by shutting herself in her room.

During her first stay in the hospital her thoughts were essentially, as previously noted, but she managed to rouse herself out of them to some extent after a time; after returning home they recurred and she felt more keenly that her mother was hard on her and treated her differently from the other members of the family. She cared a good deal for her fiancé and was much distressed when in September, 1910, he made an improper proposal to her. She did not have the courage to dismiss him as she still loved him but when shortly afterwards he wrote her that he was interested in another young woman and that he had never really cared for her, she felt mortified that she had allowed him certain liberties, such as allowing him to kiss her in public at the station. She believed herself partly responsible for the improper proposal on account of her abnormal thoughts and is convinced now that his one object was to ruin her.

She further gives an interesting account of dissociation of personality shortly before returning to the hospital. She states that she felt herself followed by another self wherever she went. Could see this self which looked like her, quite distinctly; it would mock her and make fun of her and finally became so annoying that she felt like committing suicide. She states that she heard the voice of this other self as distinctly as any other

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speaking voice. For several months after admission she varied considerably; at times talking readily and taking a moderate interest in her surroundings again morose, seclusive, irritable with sudden attacks of resistiveness. Six months after admission she had a violent outbreak of disturbance; threw herself out of bed, resisted attention and feeding; was very profane and rolled around the floor in a nude condition; tearing everything that the nurses put on her. Some time later she explained that during this period of disturbance she was in constant fear of being killed. Thought that she was either to be burned or hanged in a nude condition in a public place before a crowd of spectators, and that this would bring a terrible disgrace on her family; that this punishment was to be inflicted upon her on account of her inefficiency, of not having been of help to others when she had the opportunity, and for having drifted into a condition where she couldn't help herself. She didn't think that she was to be punished for immorality although she heard herself continually accused of immorality. Thought that when other visitors came into that part of the ward, that they were brought in to see her, she being pointed out to them as an immoral person. Thought the nurses were talking about her whenever she saw them talking together. During this time she repeatedly saw her former fiancé on the grounds; thought he had come here to annoy her. She also thought that her body was filled with poison and that everyone who came in contact with her would be affected by it; this was why she didn't want the nurses to touch her. She smelled the peculiar odor of this poison on her hands; found it different from any odor she had known. She tore her clothing and lay nude on the floor because she felt undeserving of any clothing and knew that it was going to be taken away from her in the end anyway. Her attempts at suicide were efforts to anticipate the public execution and thus save her family from disgrace. For two months, in November and December, 1911, she appeared very well, interested in things about her and generally easier. Then followed another short period of irritability with renewed improvement so that she went home on parole on February 28, 1912.

Six weeks later, on April 8 she was returned, having shown great irritability and disturbance at home with marked suicidal tendencies. It was the same story. Complaint of unkindness on the mother's part, who purposely misunderstood her and whom she characterized as "repulsive to her." After her return she remained irritable but got along fairly well until June, 1912, when without provocation she attacked the nurse and tore her uniform. She considered her dignity compromised and all her actions misunderstood. It was finally learned that she was much disturbed mentally about the crime committed by Richeson, the convicted Massachusetts clergyman who was about to undergo the death penalty for having poisoned a young girl for whose pregnant condition he was responsible. Patient had a number of horrible dreams in consequence; saw her cousin kill another man before her eyes. Carried these distressing impressions into the day with her which made her so uneasy that she couldn't do anything. She would not enter into any further analysis of the dreams. After

the subsidence of this attack she again got along very well for two months when a renewed attack of irritable depression supervened. She stated that the impure thoughts, i. e., the vision of the male genitalia, were again controlling her mind to such an extent that she felt unable to concentrate on anything. That she is thoroughly disgusted with herself for having these thoughts but that she is utterly unable to control them. She has the feeling that all men are bad and is continually in fear of an assault; has lost her faith in all of them and feels that everybody is a hypocrite and that they are all doing everything in their power to make her lose her temper. She distinctly states that at these times of depression she does not find things unusually difficult but feels that she could do them just as well as ever if she were only relieved of the thoughts referred to. For the next two months she varied as usual until finally in December, 1912, an unusually violent attack of disturbance occurred when she used the most profane and obscene language possible, tore off all clothing and struggled continually with the nurses, requiring several hypodermics in the course of the night to obtain a semblance of control. At present she is again quiet and self controlled, occupies herself with reading, studying and fancy work and has parole. But she lacks a real *vis a tergo* in her work and on close questioning it is learned that the old undercurrent persists, and will probably break through again in the near future.

Physically she has never shown any variation from the normal with the exception of a slightly enlarged thyroid. There is no history nor evidences of masturbation.

While we have then in this case superficially a manic depressive reaction type, on closer study we find the case lacking in the manic depressive characteristics—there is no real depression, no real retardation, and a comparatively small admixture of the autopsychic element. We have on the other hand a morbid sexual undercurrent, the first symptoms of which date back to five years of age; *the principal symptoms being an automatism of thought* through which crude sexual images fill her mind at certain times to the exclusion of all healthful activity. When these impressions reach a certain stage of control an emotional outbreak occurs. Through morbid ruminations at five years of age, an unconscious attachment was produced to the father accompanied by fear, i. e., an inverted desire and a feeling of resentment against the mother, her rival, which first manifested itself at the age of puberty. As a result of this the impossibility of a normal adaptation to her men friends. This mental preoccupation which was probably evident in her manner, was also probably the cause of the emotional traumata which she experienced in the course of her engagement. The whole mental picture is a decidedly crude one with very little attempt at symbolization. An interesting feature is the temporary dissociation of the personality without any stigmata of hysteria.

CASE V.—K. J., æt. 25, American, of German parentage, daughter of a watchmaker.

Family History.—Negative as regards insanity. Father is a very intemperate and immoral man. Paternal grandfather and uncle also very intem-

perate. Mother is a frail, timid, vacillating woman, lacking in stamina. There were eight children of whom our patient is the seventh. Four died in infancy; sister of the patient is very nervous and has separated from husband—two brothers are said to be well.

Personal History.—When three years old complained of pain in one ear, had fever and several convulsions. Recovered in a week. No convulsions since. Had the ordinary diseases of childhood and while living in Texas six years ago had severe malarial fever. Is said to have been bright in a general way as a child but always found her school work rather hard and *was somewhat seclusive and obstinate.*

Psychosis.—Patient sought admission as a voluntary patient on April 4, 1910. Complained of feeling depressed and obsessed by suicidal thoughts. Felt that people were looking at her and that they were accusing her of immoral conduct. She believed her condition to be the result of masturbation which she had practiced since six years of age.

She gives the following account of the development of her trouble:

When six years old she learned the habit of masturbation from her two older brothers. When she was ten years of age her father, who is a very intemperate and immoral man, commenced to have incestuous relations with her eighteen-year-old sister, whose room she shared. This continued for several years and he finally tried to induce her to go to Mexico with him. Witnessing these terrible scenes increased her own habit.

When about fourteen she realized that she was doing wrong and tried to discontinue the habit but unsuccessfully. She found her school work hard as she couldn't concentrate; everything would suddenly go out of her mind, even if she thought she knew her lessons. She finally lost interest entirely and left high school at the end of the third year.

Her mind has gradually become completely obsessed by sexual ideas. She can think of nothing else and everything suggests them to her. She is frequently annoyed by a crawling sensation below the border of the ribs on the left side followed by contraction in the vagina. At these times she sees men nude before her. She has changed from one occupation to another and latterly has come down to housework. Left her last two positions after a short time as she thought that people were looking at her and making remarks about her, accusing her of having immoral relations with men. These were not actual hallucinations of hearing but "thoughts." She feels that she cannot live at home as they all accuse her of wanting to run the house. She is out of harmony with her married sister (the one who had incestuous relations with her father) and feels that the latter is not training her child properly. She is worried about her brothers; feels that on account of their early habits they are not the same as other young men although they themselves do not realize it. She feels selfconscious before them because they knew of her early habits. Perhaps they try to help her but don't know how. *The greatest difficulty is with her father.* She is afraid of him because he often looks at her in a strange way. This fear is especially marked when she is alone with him. She is afraid that he may assault her sexually as he did her sister because she knows that

his will is stronger than hers. Her mother, she thinks, means well enough but is ruled by, and sides, with the others.

Physically she showed nothing beyond a moderately enlarged thyroid.

She brightened up to some extent during her four months stay at the hospital but *while she came here ostensibly to get over her abnormal thoughts, she states that "she doubts whether she is serious enough in really wanting to get over them. She wants to and yet it seems as if she doesn't want to."*

After her first discharge she gradually drifted down and became more and more inefficient. At home she was irritable and quarrelsome, read a great deal of poetry and wrote for hours an incoherent mass to no purpose. She finally drifted again into the hospital late one evening appearing confused without any definite idea of what she wanted to do. Talked in an aimless way about wanting "to face it," but couldn't explain what she meant. Threatened to commit suicide if there was no help for her. After admission she was very uneasy with frequent impulsive actions, jumping out of bed suddenly and hiding; with marked ideas of reference—thought the nurses talked about her. She again brightened up to some extent and left the hospital five months later, the mother refusing her consent to commitment.

On April 6, 1912, when she returned for the fourth time she expressed the idea that she was nearly gone physically, on the verge of cancer in fact. Pointed to a harmless abrasion on the toe, saying that it was a serious affair, that it was surely cancerous; that it would cause the loss of the foot and in this way her whole body would go. It was learned that her mother had developed carcinoma of the uterus and this was evidently an effort at identification with the mother. She continued excessively solicitous about the mother, accusing father of having brought about her mother's illness and unhappiness through his intemperance. In spite of this she showed very little real emotion when the mother actually died. Her resentment against her sister now became redoubled but her attitude towards her father changed markedly. She asked physician to allow her to go and see the father as she knew that he was doing better—drinking less. Indicated the hours when she was most likely to find him at home. As a matter of fact the sister wrote us that she had been obliged to leave the house as her father had been much worse since the mother's death, and was absolutely impossible to live with. *From the symptoms—the fear of the father, the identification with the mother in regard to the cancer, the hatred of the sister who had had incestuous relations with the father, the oversolicitude about the mother during her life time with indifference at her death, followed by redoubling of hatred of sister and makebelieve of father's improvement and her desire to see him—we have undoubtedly a father complex as the underlying factor.*

Owing to the comparative crudeness of the concepts and their nearness to the surface—the attempt at disguise being extremely meager, psychotherapy has been of absolutely no avail. She has become more and more incoherent in her mode of thought, negativistic and antisocial—a typical

præcox attitude. The keynote of her non-improvement is probably found in her own saying "that she doubts whether she is serious enough in really wanting to get over it." She is evidently satisfied with the situation although she makes now and then a makebelieve protest.

CASE VI.—A. T., æt. 27, born in Buffalo, of German Lutheran parents, divorced, temperate.

Family History.—*Father very intemperate. Maternal uncle was insane*—details not obtainable. There were ten children in the family of whom patient is the eighth. *One brother is very nervous and irritable*; cannot hold a position. No other instances of insanity for three generations.

Personal History.—Childhood normal. Learned well at school, finishing eighth grade at 14. Liked games and company. Helped mother until 16 when she obtained a position in a box factory. Married at 19, had one child which died at seven months, presumably of whooping cough. Husband was very intemperate and shortly after marriage infected patient with syphilis for which she was thoroughly treated for two years. After death of child she left husband because of non-support and worked as a packer in a soap factory until two days before admission.

Onset of Psychosis.—Sudden, two days before first admission at 25 years of age. Shortly before closing hour at the factory she complained to another girl that she had not accomplished much, that everything seemed difficult. The next day after a sleepless night accused mother of being a witch and of exercising some spiritualistic influence over her; later accused family physician and minister of exercising the same influence. The following day thought mother was trying to poison her; talked to imaginary people; said she saw spirits. Relatives believed this to be caused by the fact that she had attended spiritualistic revival meetings during the winter. Finally she became so restless and violent, attacking mother and throwing her out of bed, that commitment became necessary.

On admission, April 19, 1911, she showed moderate distractibility, some trifling and an occasional indication of flight but no actual pressure of speech although she talked considerably voluntarily. Her ideas revolved principally around religious and sexual topics with ideas of influence, fleeting in character, showing a loose connection but very little elaboration.

"She is the blessed Virgin, wants to go to Heaven because she doesn't want to do wrong. While in her family physician's office saw a picture of Pontius Pilate, which changed to Martin Luther; then a rooster crowed and the church bells commenced to ring. Later someone said 'Scisson,' who is a hypnotizer; she has felt the electricity and the light. The fortune teller told her it was Scisson."

Later when she quieted down it was learned that she had been subject to numerous sexual traumata. When a small child, and being the youngest girl, she used to sleep with her older brothers and was enlightened by them on sexual matters at an early age. When 8 or 9 years old she commenced to practice masturbation which she has continued more or less to the present time. At eleven, while her brother had measles, the mother

had her sleep with the father, a very intemperate man, who attempted incestuous relations. She defended herself, realizing that there was something wrong about it. At 18 she became illegitimately pregnant. Felt very badly about it and thought of suicide, getting a bottle of poison unbeknown to the mother. On the evening of the day her child was born she was married to the father of her child but was not happy with him as he drank and did not support her. She was fond of her baby and felt badly when it died. Soon after baby's death she separated from her husband. She had no other serious love affair but flirted considerably with a conductor named S—. She always tried to do right but feared that she might do wrong. About a month before admission she went to a spiritualist who pretended to show her her sister's spirit and told her that she (patient) had the power to become a spiritualist.

At the hospital she varied between excitement and depression for a month; then became normal in her manner, interested in work, associating pleasantly with other patients, showing excellent insight; left the hospital two months after admission and was discharged recovered September 30, 1911, five months after admission.

Readmitted as a voluntary patient on May 16, 1913, because she is depressed; thinks that a man friend has an influence over her, draws her to him, talks to her and tells her what to do and to wear. Sister states that patient was well for one and one-half years after her discharge. In November, 1912, she became sleepless, lost her appetite; this followed closely upon her employer's accusing her of having transmitted vermin to her son. It was also learned that this woman had made patient believe that a boarder (the policeman S.), formerly a street car conductor, was in love with her and that this same woman had induced her, unbeknown to her (patient's family) to obtain a divorce from her husband. She developed crying spells and later became excited; pulled clothing out of drawers and strewed it about. Struck her mother saying, "I could kill you." Thought mother was trying to poison her which was her reason for not wanting to eat; when she did eat at the table she stirred up her food and expectorated into it. She also claimed that the policeman, referred to above, had baked a cake which contained something that had made her insane. On admission she appears dull and depressed, has tears in her eyes. Is cooperative; she volunteers little; speaks slowly but expresses no subjective difficulty in thinking.

She states that since November she has felt her former employer, Mrs. T, drawing her against her will to her house and that this woman's boarder, the policeman S—, has been hypnotizing her and subjecting her to immoral relations while under this influence. Knows that it is his influence because she frequently hears his voice. Sometimes it sounds like an ordinary conversational voice; again it is a wave that comes up from the pelvis and becomes a voice in her chest. She feels that this man's spirit has entered her body and controls all her actions. During the analysis she stated that while she never cared for her husband, she had cared for Mr. S and had hoped that he would marry her. He intimated as much when

he told her that he would come to see her after she obtained her divorce; since she secured it, however, he has not asked her in marriage and she thinks that possibly he is already married. In fact she has been told so. She now no longer wishes to marry him as she believes him to be a bad man since he has annoyed her to such an extent. The mental functions in all other fields are perfectly normal and she shows nothing physically beyond exaggerated patellar reflexes and a slight systolic mitral murmur.

In this case *we have then traumata very similar in character to those found in the first five cases* but we have an entirely different reaction type. While she has in both attacks had short episodes when she struck her mother because she thought the latter had bewitched her and said she could kill her, she has, aside from this, shown a very normal attitude towards the mother. During the first attack she spoke a few times of seeing her father expose himself and of her brother sitting on her bed and testing her but these were actual occurrences and there are no indications of elaboration or conversions. We have, during the first attack, indications of a real attraction towards a certain man outside of her family which later became intensified resulting during the second attack in crude sensations which she interprets as occult influences emanating from this man when they become too insistent and when she is disappointed in reaching the goal of marriage. The early bad mental hygiene while not producing a father or brother complex, has yet injured her emotional life to such an extent that she cannot control the impulses arising within herself and projects the cause for them outside of herself. While the picture in the main suggests a manic depressive reaction type it is not pure and the prognosis is probably ominous on account of the strong sexual trend which will probably always give rise to conflicts.

CASE VII, C. D., æt. 55, born in Germany, married, wife of a boilermaker, mother of one child 19 years of age, temperate.

Family History.—*Father was very intemperate*; otherwise normal mentally. *Mother died in Utica State Hospital* when patient was seven years old. Patient's only *sister had an attack of acute mania* during lactation. Recovered in three months. Her only *brother is confined at Buffalo State Hospital with dementia præcox*.

Personal History.—Was considered a normal girl but unable to learn much in school. Can read a little but cannot write although she went to school from 7 to 13. After leaving school worked as a charwoman, cleaning by the day. Had an illegitimate child at 20 and lived with the father of her child, O. W., for nine or ten years. Ten years ago married a widower with whom she has been very happy. He states that she has been a sensible woman, a good housekeeper but somewhat nervous and talkative.

Onset of Psychosis.—During the summer of 1906 she was flighty for one week after which she returned to her normal condition. On October 13, 1906, a month before admission she showed sudden excitement during the night. On awakening from sleep jumped up suddenly and rushed up to husband, saying, in a happy frame of mind, "We are all saved now." Later

showed more confusion; worried about her boy; repeatedly went to the door to see whether he had come in; upset furniture. Thought the neighbors were talking about her, calling her vile names; that they had all turned against her; were listening to everything she said. Attempted several times to escape from the house barefooted carrying a religious picture. On day preceding admission tried to strike son with a piece of wood and later struck husband because he did not answer her question and because she thought that he had locked the door to keep her son out of the house.

During the mental examination following admission she impressed one as somewhat simple minded and emotional. She was loquacious and circumstantial in her account and reiterated a good deal. Was apprehensive of impending harm. Said, "If I have made any trouble I am willing to pay for it. I don't care if I had died as a child; I would have been better off." Later said, "Don't take my life. If I could only jump out of the window. You ought not to take my head off. I cannot explain. My husband should support me. God always takes care of his people even if they have a great many children." She worried because her clothes were dirty when she came. Wanted us to send for the priest to tell him about it as she doesn't want to lie before God; doesn't want to make any trouble.

She was thoroughly cooperative. Orientation and memory were fair, and although her stock of educational data was practically nil and general experience very limited, she showed a keen appreciation of duty; wished some responsible person to take charge of her brother's money as she was his guardian.

Her depression and apprehension lasted only three days after which she became bright and active, showing great interest in the work of the ward, in fact had to be watched as she was inclined to overdo. She explains her nervous attack on the grounds that recently her husband's sister had reproached her for having had an illegitimate child. Patient states that she had told her husband about it before marriage and nothing had been said to her about it previous to this time. This would explain the ideas she expressed that "the neighbors were talking about her and calling her vile names; that her husband had locked the door to keep the son out of the house and the remark that her husband should support her; that God always took care of his people even if they had a large number of children."

The second line of delusions, "The sudden feeling that everybody was saved," which she expressed in the middle of the night on awakening from sleep, is explained as follows:

She had been worrying considerably over the fact that her sister's children had never been baptized. Her sister's husband, being a Protestant, would not allow them to be baptized in the Catholic faith. Mrs. D, who was a devout Catholic, felt that the children would be eternally lost and when her brother-in-law died, two years ago, she felt at liberty to urge the baptism upon her sister, who however failed to comply with her request. The matter was on her mind constantly. During the night ushering in her

excitement she awakened out of a dream with the feeling that all sects had disappeared; that there was only one church and that consequently all people were saved. A distinct wish realization.

She showed no further excitement during her stay in the hospital and was discharged two months after admission with a very good appreciation of her illness and a thorough sense of responsibility towards her simple duties in life.

She has been seen from time to time by the writer—the last time about two months ago, as she visits her brother with faithful regularity. She stated at this time that she had been perfectly well since leaving the hospital and she appeared as well as at the time of her discharge.

We have in this case a woman with a very bad heredity who had a distressing childhood, was intellectually below par, and had an illegitimate child at 20. Her mind however seems to have been occupied not with sexual matters but with the work which was at hand for her to do. That she was not callous is shown by the admixture of depression during the attack at 52, which was probably partly the result of the reproaches on the part of the sister-in-law relating to her illegitimate child. Her worry over her sister's children shows considerable altruism and the nature of the attack—the wish realization—a fair degree of imagination. The reaction type is entirely different from that in the *præcox* cases; while these are steeped in a selfish line of wish realizations, principally of a disguised sexual nature, towards which their whole line of thinking converges to the exclusion of all other interests of life, the wish realization in this case is an altruistic one; there is a desire to rise above difficulties and to do the best possible in life; to lay hold of the balancing influences as soon as the perturbing factors are in some degree adjusted. It is a matter of isolated disturbing complexes amenable to treatment instead of a lifelong ingrained abnormal development; hence the satisfactory outcome.

CASE VIII.—E. B., æt. 31, American, of Irish parentage, married, mother of one child, temperate, admitted November 21, 1911.

Family History.—Nothing known of father's family as they are all in Ireland. *Father is a moderate drinker.* Maternal grandparents are healthy, temperate people. *One maternal uncle is a moderate drinker. Three sons of a maternal aunt are very intemperate.* Mother is a healthy, well-balanced woman.

Personal History.—Is the youngest of three children; the other two are living and healthy. She had the ordinary diseases of childhood. Graduated from high school at 22, got along well with her studies, was jolly, full of fun, fond of her boy and girl friends. Being the youngest, life was made rather easier for her than for the others. She was not taught to sew or do housework, and had no responsibility outside of her school work. After graduation clerked and later entered the telephone exchange where she worked hard and was rapidly advanced. She lived quietly at home, giving her earnings to her mother. *She never had any trouble or emotional traumata until she became illegitimately pregnant, the father of her child*

being a man she had known for six or seven years and to whom she was engaged to be married. When she found herself pregnant she became depressed, felt that she had disgraced her family; concealed her trouble from them and when between five and six months pregnant, consulted the Bishop of Scranton who because of her former unblemished life gave his sanction to the marriage but advised her to go to Buffalo. She was married in Buffalo to the father of her child but continued to worry about her sin; *believed that she would die in childbirth as a punishment.*

Onset of the psychosis was rapid, immediately after the birth of her child.

While being given chloroform during delivery she saw a horrible face—the devil's—revolving before her. After regaining consciousness, she remained clear until a few hours later when chloroform was given a second time for repair of the perineum. At this time the vision of the face returned and in addition she saw herself in hell with a great many people some of whom she had known, others whom she did not know. Thought that they were all being condemned on account of her wrongdoing. Continued to see the devil's face on the counterpane, on the food, touched it with her hands. Heard her cousin's voice saying that she wished they might wash her body since she was dead; heard that the priest had been refused permission to administer the last rites as she was too wicked to receive them.

On admission three days after onset, thought she was being brought in an undertaker's wagon to an undertaker's establishment; this alternated with the idea that she was in hell.

Five days after admission she was free from hallucinations of sight and hearing but she continued to feel that her soul was lost and that she would never get well. After gaining her confidence she very reluctantly told her whole trouble which gave her a certain amount of relief but it required seven months of constant training and encouragement before she finally adjusted herself to the situation and was willing to make the best of a fault which could not be undone. *Physically* she showed only slight exhaustion but *a goiter with moderate tachycardia.* After leaving the hospital on June 1, 1912, she reported regularly and showed excellent judgment and a clear-eyed outlook upon the world. Soon after discharge she again became pregnant but accepted the new burden in a cheerful, wholesome spirit. We have recently learned that she passed through delivery in a perfectly normal manner and is very happy in the possession of her two children.

In this case we have a grave emotional trauma at 31 which produced a depression of seven months duration. While we have a short toxic exhaustive period of about a week's duration, possibly brought out by the chloroform, we have after recovery from this, a persistence of the depressing emotional factor with final complete adjustment after seven months. There is every reason to believe that the patient will remain well since we have one distinct disturbing emotional episode in an otherwise normal development, the search for earlier traumata having been ineffectual.

SUMMARY AND CONCLUSIONS.

In comparing the first five cases we note in all a poor family background in which neurotic tendencies and intemperance figure prominently. In Case I, the father was sent to prison for some moral offence and the sister is physically stunted and nervous. In Case II, the father, paternal aunt and brother were very nervous.

Case III shows the father possibly syphilitic, forgetful at 54 and mother fussy and nervous.

In Case IV the father had an attack of depression from which he recovered; one paternal uncle, maternal grandfather, one maternal uncle and maternal cousin were intemperate.

Case V. Father very intemperate and immoral; mother weak, lacking in stamina. The social status varies from poor to well-to-do but on the whole is of a fair average.

The age at which the patients came under observation varied from 25 to 35: one patient was married, the others were single. In disposition they were characterized as "quiet and reserved." "Quick-tempered and very sensitive," and "seclusive and obstinate," while nothing could be obtained in regard to the other two.

All gave a history of bad mental and moral hygiene. In three we have a history of masturbation, commenced at 6, 9 and 14 years of age respectively. In one case the practice was denied but there were evidences of the habit and in one there was neither history nor evidence. In four of the cases we obtain a history of the patients sleeping in the parents' bed until at least five years of age; in one case until 10, in another until 7 and in one until 12. In the fifth case incestuous relations between the father and sister were witnessed at 10.

It is rather interesting to note, that in several instances the earliest symptoms are dated back to five years of age.

Case I had anxiety dreams and hallucination of sight at 5.

Case IV saw father's genitalia at 5, commenced to ruminate about them and the vision of these organs later became an obsession.

Case III complained of a lump in her throat when between 4 and 5 years of age and for three months could not eat any solid food. This symptom recurred in exactly the same way at 21.

In three cases we have a fear of the father; in two this fear developed at puberty.

In two we have fear of touching the father's body after death.

Physically we have a variation from frail to excellent and three had enlarged thyroids.

As regards diagnosis two might be classed as psychæsthenias, one as allied to manic depressive insanity and two as præcox but it seems to me that we have in all of the cases essentially the same mechanism; that they are all really of the præcox type because they all show a more or less shut-in personality, a living for self without any real altruism or self-forgetfulness and a consequent inefficiency. From earliest childhood they appear to have a special affinity for sexual matters and their interest centers around these rather than around the other influences of life. On this account too, they are probably so subject to traumata. It is not a question of one, two or even more traumata, but it is essentially a faulty habit of mind.

One case showed a strong homosexual trend and none showed a well rounded sublimation of the sexual instinct.

It is rather interesting that the five patients happen to be Protestants—two Lutheran, two Presbyterian and one Baptist. Dr. Freud's cases belonged principally I take it to the Hebraic religion, and it would be interesting to know whether Catholics are as subject to this particular reaction type or whether perhaps the early habit of confession, commenced in their church, I understand, at about 8 years of age, straightens out some of the symptoms by ventilating their thoughts. In Catholics we find of course frequently the identification with the Virgin Mary, etc., possibly a homosexual complex.

Case III shows very conclusively why gynæcological operations in these cases are frequently unsuccessful. The underlying complex is not modified by the operation and is even as in this case often made worse. That neither bad heredity nor faulty physical development, like enlarged thyroid, are causes of the disease is shown by the fact that one or both are found in one or the other of the contrast cases. That the faulty mental hygiene in early childhood is not the exclusive factor is demonstrated by Case VI where we have with similar factors a different type of reaction, not a father complex. However the faulty hygiene acted here also as a grave emotional trauma which prevented a normal adjustment in early adult life. We have then still to admit

that there appears to be something else inherent in the individual to bring about this type. We realize the truth of what Bleuler says about paranoia, namely, that "In the majority of cases of paranoia there is a constitutional predisposition plus a chain of Freud's predisposing occurrences and that with the same physical and mental trauma, one person develops an incurable psychosis, another a transient hysteria, another a momentary fright."

There is no question in my mind about the help that Freud has given us in dealing with these cases especially in the less pronounced types. In this connection I would like to cite the case of a nurse who while in training was considered somewhat peculiar and antisocial but otherwise of a very good intelligence. Some time after taking up work in a distant city, she wrote me a letter on the eve of a serious operation, in which she confessed to homosexual thoughts towards a certain woman. She felt this mental state as a disgrace, felt that she would lose her reason if she had to live in this way and hoped that she would die during or as a result of the operation. I was at a loss to know just what to do to help her at this distance but finally wrote her a long psychoanalytical letter in which I told her that while hers was a most unfortunate condition it was not a disgrace but rather a disease which was encountered not infrequently by alienists. That it was usually traceable to certain traumata or faulty factors of mental hygiene in early childhood—explaining to her what these factors were—and that if she would trace back her life she would probably find something to account for that particular type of development in her own case, that although it was a misfortune, it was her duty to try to work out of it and I then laid out a reconstruction plan of her life in which altruistic factors formed a prominent part.

I did not hear from her after that for a year and a half when she wrote me a very wholesome, sane letter in which she stated that she had just successfully passed a certain examination for which she had been working. That now she would have a certain amount of time at her disposal outside of her work and she asked me to outline some study with which she might fill this time. At the end she thanked me for my letter which was the only reference

she made to the subject. I thereupon mapped out for her three different lines of work, either one of which would keep her busy for several years.

In this case the self analysis with the aid of the clue given her, was possibly more effectual than a prolonged analysis with the physician would have been.

While we can do but comparatively little with the fully developed cases since they appear essentially satisfied with their abnormal trend and only put forth a makebelieve effort now and then, it should be possible through the knowledge of these facts to do something along the line of prevention among children judging from the comparative success in the milder adult cases.

BENJAMIN RUSH, PATRIOT, PHYSICIAN, AND PSYCHIATER.

A CENTENNIAL MEMORIAL NOTE.

By FRANK WOODBURY, A. M., M. D.,

*Fellow of the College of Physicians of Philadelphia: Secretary to the
Committee on Lunacy of Pennsylvania.*

If we direct our attention to the curators of the insane at the beginning of the last century, there is one figure which stands out, *Primus inter pares*. It is that of Dr. Benjamin Rush, the American Sydenham, and the father of American psychiatry. He was born in 1745 at Byberry, which is now a part of the city of Philadelphia, where he lived his whole professional life. This year is the centennial anniversary of his death, which occurred at Philadelphia on April 19, 1813.

Benjamin Rush was the author of the first American treatise on insanity. This was the fifth volume of his cyclopedic work in seven volumes, and was entitled "Medical Inquiries and Observations into Diseases of the Mind," which, published one year before his death, subsequently passed through a number of editions. Dr. Tuke, in reviewing this work says that it "leaves the conviction upon the mind of the reader that he was an original observer, a humanely-intentioned, and, in many instances, a successful physician of the insane." Rush entertained positive and enlightened views on the subject of insanity. He regarded insanity not as a disease, but as many diseases, and of different kinds. He held that insanity is not merely mental disease, but a disease of the entire body. More especially it is not always the result of disease of the brain and nerve centers, but a large group of cases are caused by the blood and arterial excitement. As theory governs practice, he consistently advocated discrimination in the diagnosis, and the individual treatment of each patient according to the existing conditions. He maintained that "diseases of the mind can be brought under the dominion of medicine by just theories of their seats and proximate causes."

In his celebrated oration entitled "An Inquiry into the Influence of the Physical Causes upon the Moral Faculty," after

referring to the memory, the imagination and the judgment, Rush said: "Persons who labor under the derangement, or want of these powers of mind, are considered, very properly, as subjects of medicine, and there are many cases upon record that prove that their diseases have yielded to the healing art."

On September 24, 1810, Dr. Rush addressed a letter to the Board of Managers of the Pennsylvania Hospital, in which he shows in every line his sympathetic regard for the insane patients, and makes several important suggestions calculated to increase their comfort and promote their recovery. Among these are (1) segregation of noisy and excited patients in separate buildings, (2) the separation of the male and female departments, (3) employment, exercise, and amusement for the patients, (4) special companions or instructors to share their amusements and converse with them, (5) the protection of patients from the intrusion of strangers, (6) the supply of comfortable bedding, etc.

Dr. Rush constantly advocated and practiced humane treatment of the insane, and condemned the abuse of mechanical restraint, although he permitted it in emergencies. In fact, he invented a special chair which he termed a "tranquilizer," and recommended its use in place of the strait-jacket and confinement in bed, as being "more comfortable for the patient." He also devised a "gyrator," a mechanical apparatus, by means of which centrifugal force was utilized to increase or decrease the quantity of blood in the cerebral vessels. Hydrotherapy held a prominent place in his treatment of the insane. He also held enlightened views upon the importance of other physiological remedial agents, such as regulated rest, exercise, employment and recreation, when carefully adapted to the requirements of the individual patient. He was a firm believer in the curative power of medicine in all conditions, and this led him to assume a hopeful and helpful attitude towards the insane.

The public services of Rush, while Attending Physician to the Pennsylvania Hospital, and his official connection with the College of Philadelphia, and subsequently with the Medical Faculty of the University of Pennsylvania, and notably his labors during the yellow fever epidemic (1793-1805), are matters of familiar history. His monograph, reporting his personal observations during this epidemic, is an acknowledged classic.

Rush became a member of the Philosophical Society in 1768 and took an active part in its proceedings for many years. His celebrated oration on the "Influence of Physical Causes on the Moral Faculty" was delivered before that society in 1786, before a distinguished audience, which included his friend, Benjamin Franklin, who was at the time President of the Supreme Executive Council and Chief of the State Government. An interesting occurrence took place at this function. The peroration of the address was devoted to praise of Franklin, in which such extravagant terms of laudation were used that this part of the address was omitted when the oration was published by the society. Rush was one of the founders of the College of Physicians of Philadelphia, and the first scientific paper was read before the College by him. It was entitled "The Means of Promoting Medical Knowledge." In 1787, the College of Physicians appointed a committee, to memorialize the Congress and Legislature, charged with the duty of calling attention to the evils of the intemperate use of alcoholic liquors and asking for their reduction by the enactment of laws imposing heavy duties upon distilled spirits. Dr. Rush was chairman of both of these committees, and it is evident that it was his great personal interest in the subject that led to this unusual action by the college. He was surgeon, and afterwards physician-in-chief, to the army and for a time served also as fleet surgeon. He was a member of the Convention of the State of Pennsylvania for the adoption of a federal constitution. He was treasurer of the United States Mint for many years and until his death. He was a pioneer in the movement to form the American Bible Society and was vice president when he died. His special interest is also shown by the fact that he published a pamphlet in defence of the use of the Bible as a text book in schools. He was a member of the Abolition Society, and among the first to design an African Episcopal Church in Philadelphia. He was one of the founders of Dickinson College, and was a zealous advocate of public schools in every part of the state.

His practical mind saw the waste of time in colleges in the studying of Latin and Greek languages, as he considered them neither necessary nor useful for a course of liberal education. He was severely criticized for this radical proposition; but he was only in advance of his time in recommending the modern eclectic,

scientific course at college. He opposed capital punishment, and advocated a change in the penal laws so that "punishment may be converted into ye means of reformation." He held advanced views upon the abolition of war and advocated a special peace officer for the United States. He also advocated the extension of the ballot to women.

During his whole life he was distinguished by a spirit of practical piety and a strict observance of the rites and ordinances of the Christian religion. How he was regarded as a teacher may be inferred from this pen portrait by one of his pupils, Professor Charles D. Meigs: "When, in the autumn of 1812, I first entered his lecture rooms in the old university building on 9th street, I was enrapt; his voice, sweeter than any flute, fell on my ears like droppings from a sanctuary, and the spectacle of his beautiful, radiant countenance, with his earnest, most sincere, most persuasive accents, sunk so deep into my heart that neither time nor change could eradicate them from where they are at this hour, freshly remembered. Oh! but he was a most charming gentleman! A 'grave and reverend and potent seigneur,' in the scholar class of mankind."*

His full length portrait in oil, painted by request of the students, adorns the library of the Pennsylvania Hospital. It was paid for very appropriately out of the fund created by the sale of tickets for the medical lectures, which had been donated to the hospital by the medical staff.

As remarked by the late Professor S. D. Gross, "Rush became a member of Congress in 1776 in order to sign the Declaration of Independence, whereas others signed it because they were members." He subsequently rendered valuable service to the Government in the capacity of Physician-General of the Military Hospitals of the Military Department of the Army. Truly, he was a great Patriot and Physician, as well as Psychiater!

A statue of Benjamin Rush was erected by the American medical profession, represented by the American Medical Association, with impressive ceremony, on June 11, 1904, in the city of Washington.

* History of Pennsylvania Hospital, by Morton and Woodbury. Revised Edition. Philadelphia, 1897, page 451.

REPORT OF A CASE OF CHOREA INSANIENS.

By CARLYLE A. PORTEOUS, M. D.,

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The following case of chorea insaniens I have deemed worthy of report before the Association, not because in itself it presents any markedly unusual features clinically, but because this type of case, although considered by Clouston as a separate disease entity, has received comparatively scant mention in the literature. Whether or not its rarity has to do with this apparent disinterest in study and paucity of report is problematical; (e. g., at Verdun Hospital with an average admission rate, embracing all varieties of insanity, of practically two hundred per year for the last eight years, only two cases have been received). It is a fact, however, that such authors as Paton, Peterson, White, Kraft-Ebbing and Kraepelin have, in their most recent editions, stated little that is new along pathological, clinical, or therapeutical lines in the consideration of this grave psychopathic condition. In the *Journal of Mental Science* from 1890 to 1912 but seven cases are reported or reviewed, although in 1909 and 1911 respectively able papers are mentioned as being contributed on the subject by Dr. C. W. Burr, Professor of Mental Diseases, University of Pennsylvania, Philadelphia, and Dr. Edward Mapother, Assistant Medical Officer, Long Grove Asylum, England. Both cases admitted to this hospital during the period referred to, terminated fatally, the first, a woman, æt. 26, after eight days residence, a case which suffered from an endocardial lesion, and in which was secured a history of acute rheumatism in youth. In the case reported in detail below it will be noted no history of rheumatic taint was found nor was there a demonstrable heart lesion.

This disease, in its extreme form, is a terrible one not only from its grave outlook, but from the symptoms manifested, which are distressing alike to the patient and to those interested in the case, the hallucinoses invariably being of a fearsome, disturbing nature and always accompanied by an objective motor restlessness painful to watch.

That it does not attack the ultra-degenerate seems a fair assumption, a résumé of such cases as could be come at, shewing a fair proportion to be among those in the twenties and a few in women who had passed through the stress of child-birth and its subsequent physical taxation without mishap; in other words, those who at all events had sufficient stamina to grow to maturity and functionate normally until assailed by this dread disorder. Search of the literature would seem to shew these statements are conservative, but the writer confesses that data on these points is all too meagre. That chorea insaniens will be superadded to chorea is by no means a foregone conclusion, but how best it may be guarded against and treated after development is the business of this Association.

Previous History.—E. K. H., female, æt. 30. Married six years ago, two children; nativity, English; resided in Canada for four years; laborer's wife; Anglican; common school education; no history of rheumatism or chorea elicited. This is reported to be first attack, with onset five days ago; began to talk confusedly; believed she was suffering from some obscure disease, and that her husband was insane; some evidence of visual hallucinations unpleasant in character; violent to nurse on one occasion; takes nourishment well; shows marked insomnia; general health hitherto good, though has complained of severe headaches at menstrual periods. Heredity: One paternal uncle committed suicide; definite history thereof unknown.

Admitted January 20, 1913.—Patient was noisy, calling out loudly; restless and resisted being moved; facies indicative of great fear; expression anxious; eyes staring; pupils slightly dilated; took nourishment in fair quantity after admission.

Physical Examination.—Temperature 99; pulse, 108; respiration, 24. Patient seems weak and shews involuntary movements of body, head, upper and lower limbs, the jactitation of the lower extremities being sufficiently severe to render any attempt at walking almost impossible. Nutrition is good but entire body covered with bruises, the result of patient's injuring herself in striking against bed during the choreiform movements; muscular tone somewhat relaxed; respiratory system normal; circulatory system normal; blood pressure 130; glandular system normal; abdomen on percussion and palpation normal; urine not examined as a sufficiently large specimen could not be obtained even by catheter, without using a general anæsthetic, which was not thought justifiable, owing to patient's restlessness; eye movements normal; no nystagmus; pupils dilated, react normally to light; could not elicit their reaction to accommodation; no tongue tremor; nasopharynx normal; intention tremor of arms apparent on attempt to put glass to her lips; muscular power of arms fair; hyperæsthesia demonstrated

when foot is touched, patient screaming in apparent pain; patellar reflexes increased; "Babinski" absent; ankle clonus present in slight degree.

Mental Examination.—Mentally patient showed marked disorientation for time, place and persons; failure of attention; accelerated ideation, but disturbance of idea association amounting to true incoherence is present; many delusions of a terrifying character exist, seemingly due to the constant elaboration of visual and tactile hallucinations and illusions. For example, when patient's attention could be temporarily engaged, she manifested complete inability to remember correctly any facts anent herself, the names of her nurses, or her present whereabouts; all attempts to fix her attention were futile and she was unable to retain any semblance of a goal idea. A constant flow of irrelevant phrases were spoken by her, interspersed with occasional exclamations indicative of fear; stated that her feet were snakes on seeing them protrude from under the bed-clothing; said she was enveloped in water; would cry out and seek to turn away when anyone entered the room. This mental condition continued until on January 26, the patient completely failed to externalize; her remarks became a mere muttering, and soon after coma supervened; death resulted forty-eight hours later and was due to exhaustion. Throughout the whole course of the disease involuntary spasmodic movements of the upper and lower limbs, head, and body were manifested and continued until patient was in extremis, even then occurring as slight occasional twitchings. Unfortunately no autopsy could be obtained.

To digress, the thought has occurred to me that the Association should make at least one such psychosis as this a matter of study by all members for each ensuing year or two years. In addition to a member being asked for a paper on a subject which likes him best, he should also be ordered to report on such a series of cases as the Association shall deem the more urgent or expedient. The precise form of such reports should be drawn up to ensure uniformity. The facts obtained would be based upon abundance of material, accurate returns by trained observers; thoroughly good pathological reports by the better equipped institutions in this respect to the advantage of their less favored brethren; therapy, with the useless culled and the useful retained. They should be published as an annual or a biennial brochure by the Association, which could not fail to be a work comprehensive, accurate, authoritative, and of advantage alike to the psychiatrist, the political economist, and the eugenicist. Were some such plan carried on, search for the etiology, pathology, and treatment of chorea insaniens would be rendered more profitable and I would suggest that this psychosis be the first one chosen for concerted study by the association.

SURGICAL PROCEDURES ON THE INSANE.

BY ARTHUR S. CHITTENDEN, M. D., BINGHAMTON, N. Y.

The studies of Sherrington, and more recently those of Eppinger and Hess, seem to make it clear that the central nervous system manifestations of visceral disease often may and must be profound. And if, as neuro-physiologists have amply demonstrated, the phenomenon of segmental overflow in the cord is so important both centrally and reflexly, it is not unreasonable to suppose that something analogous takes place in the higher centers as well. Reflections, such as the foregoing, have led the writer, through the courtesy of Dr. Charles G. Wagner, to undertake a limited investigation of surgical conditions as they exist in the patients of the Binghamton State Hospital. It might be said that this has been done with no preconceived ideas of relationship between psychoses and the coexisting surgical conditions, nor has it been followed by any warrantable deductions as regards associated relief of the psychoses. Neither has the investigation been conducted with any special view to those psychoses classically associated with brain tumor, abscess, trauma, thyroid or tabes; merely a study of surgical conditions coexistent with insanity.

There are in the Binghamton State Hospital about 2400 patients. Among these are 254 patients with surgical conditions. Of this number about 200 are debarred by their surgical infirmities from occupational or special therapy. This fact seems to me to be an important one, since these patients combat, not only the surgical disability itself, but are also deprived of important therapeutic advantages.

Several surgical lesions frequently coexisting in the same patient makes classification complicated, and I will not detain you with statistics. Of the various surgical conditions, hernia leads the list in 78 patients, hemorrhoids in 32, varicose veins in 25, hydrocele (large) in 10, ankylosed joints in 14, lipomata in 7, prolapsed rectum in 7, prolapsed uterus in 5, uterine fibroids in 3, malignant neoplasms in 9, etc. None of these lesions are of the

special senses and can therefore have little or no effect upon hallucinatory states. They do, however, preponderate markedly in cases of the functional psychoses and in the constitutionally inferior. These types of cases, I am informed, are of the greatest economic value to the state from the standpoint of labor. Varicose veins, herniæ of the abdominal wall and flat feet occur more frequently in the so-called constitutionally inferior than in any other type. This is interesting in connection with studies recently made by Vogel upon patients with "constitutionally inferior connective tissue." Many of the herniæ cases are cardio-nephritics as well and it is well to bear in mind the association of an inferior central nervous system with the loss of muscle tone and generally diminished yellow elastic fibers in the fasciæ, ligaments and cardio-vascular system. Surgical lesions, as bearing upon the infective-exhaustive conditions, were few and included chronic osteomyelitis and, of course, cancer.

Many of the surgical patients are aged, have been disabled many years, and are inoperable; in very many, however, the condition is remediable.

In our experience the ordinary operative procedures as carried out in insane patients are not as a rule more formidable or attended with more difficulty than under normal mental conditions.

The chief practical problems which immediately present themselves are those of anæsthesia and after care. For purposes of anæsthesia and especially in patients over forty years of age, we have been led to rely almost entirely upon drug narcosis. This requires usually but one hypodermic injection. We use a combination of scopolamine and morphine. Scopolamine differs distinctly from hyoscin in that it is much less toxic and produces, when reinforced with morphine, a profound euphoric tranquillity. In excessive dosage, however, it acts as a deliriant and the appearance of such a condition is an indication for more morphine.

Our patients are given 1/100 grain hypo of scopolamine with 1/4 grain morphine one hour before operation and then left undisturbed. At the end of this time they can be easily aroused but are indifferent to their surroundings and usually fall asleep when placed on the operating table. The operative field is then blocked off by injecting 1/4 per cent solution of novocain or a solution of the hydrochlorate of quinine and urea; the operation then

proceeds. An observer at the patient's head closely watches the respiration and pulse. This form of anæsthesia is especially safe and efficient in the aged, in high tension cases and in cardio-nephritikers. These patients awake very slowly if undisturbed, their tranquillity continuing for 24 hours or more. This state can be prolonged if desired by additional small doses of morphine and the patients frequently do not realize that any thing unusual has occurred. If the field of operation be one of unusual sensitiveness or the patient one of marked irritability, prolonged local after-anæsthesia can be obtained for two to four days by blocking the field at the time of operation with hydrochlorate of quinine and urea instead of novocain. Persons younger than 40 years do not bear scopolamine well. In such individuals the drug acts as an excitant and produces an undesirable fall in blood pressure. If used at all in young persons, scopolamine should be given in small dosage, 1/200 grain, with morphine sulphate grain $\frac{1}{4}$ and repeated; or, better, morphine alone followed by ether.

Plaster of Paris dressings, properly applied, will remove if necessary any question of the patients disturbing the bandages. A Gigli saw placed beneath the plaster which is therewith cut through immediately as it is applied makes the operative field always accessible and yet amply protected. In but one instance have we found it advisable to employ the camisole.

It is especially to the safety and simplicity of the methods outlined that I invite your attention.

Up to the present we have had no infection and no fatalities; the ages of our patients have ranged from 25 to 70. Our operative experience, employing the foregoing methods, is limited to but eighteen. The types of insanity represented in our cases include dementia præcox, acute mania, recurrent mania, manic depressive and paranoid conditions.

Among the surgical conditions involved were inguinal herniæ (single and double) osteomyelitis, large lipomata of various regions, cancer of the parotid, extensive tuberculosis of axillary glands, tuberculosis of the testicle, etc.

Our experience, as far as it goes, leads us to feel that insane patients are not, by virtue of their mental conditions, bad risks or especially difficult in the matter of after treatment.

We are now trying to correct all operable conditions at admission, at the same time slowly reducing the number of cases which have been accumulating during many years. We believe at present, since operable procedures upon the insane have been reasonably simple and safe in our experience, that we are warranted in our efforts in this direction because—

(1) The patients are thereby able to enjoy occupational and other special therapy;

(2) Their economic value to the state is increased; and

(3) They are relieved of certain peripheral disturbances whose importance is undeterminable. If a sound mind in a sound body is a reasonable postulate, then surely correction in cases of the insane of coexistent surgical conditions would seem to be warrantable, especially if the undertaking presents no unusual risks.

ANNUAL ADDRESS.

By EDWARD RYAN, M. D.,

Superintendent, Rockwood Hospital for the Insane, Kingston, Ontario.

It is my pleasant duty to extend a word of welcome to you to-night.

Some men are born to honors, some achieve them, some have them thrust upon them ; in this particular case I may say the honor was thrust. No one can regret more than I the loss to the meeting caused by the fact that the Hon. W. J. Hanna has found it impossible to deliver this annual address. He has deeply at heart the progress and advancement of the hospitals for the insane, and his one desire is to give to the country the very best hospital service.

It is a pleasure to be able to state that psychiatry has made considerable advance in Ontario in recent years. In all respects the conditions surrounding the hospital life of the patients have been vastly improved. The training school and the trained nurse have contributed largely to the breaking down of the mystery and aversion surrounding the hospitals for the insane.

Under the more modern methods of treatment the results have been so satisfactory that the public begin to recognize that for the insane all is not lost, nor need hope be abandoned. The closer union, too, with medical centers ; the fact that many hospitals for the insane are now an integral part of university life has contributed largely to the dissemination of a knowledge of psychiatry among the general practitioners and through them to the public. This spread of knowledge has influenced in more than one direction. It has directed public attention to the hospital. As a result we have a more intelligent class of nurses, a more zealous type of official, a modern therapeutic equipment, an earlier admission of the patient, and an all-around higher and more enthusiastic medical life.

Psychiatry has therefore made marked advances during recent years along clinical and therapeutic lines. The labor and devotion of a splendid band of faithful disciples has cleared the air of the

mysticism and doubt which so long enshrouded this great department of medicine. Psychiatry, we may say, had its birth in the humanitarian labors of Chiarugi and Pinel. With a professional and chivalrous courage they broke the chains that held the sufferer in his prison cell, and that bound the science to the dismal traditions of the past. The labors of Connolly and Tuke in England marked a still further step in this civil advance. Then came the earnest endeavors by many workers in many fields, to establish psychiatry as an exact study, on a scientific basis; to regard it as a purely medical or as a psycho-medical science, governed by well recognized laws, and capable of exact interpretation. This view reached its highest in the studies, the writings and the system of Kraepelin.

It is worthy of notice also that side by side with the progress of our knowledge of mental diseases there developed a series of cognate subjects, born of the family, and requiring in their determination a study and a treatment as profound and as scientific.

There is the vast array of social questions, the care and treatment of the inebriate, the feeble-minded, the degenerate, the social outcast, the social plague. These grave questions are now receiving a study and attention, social, scientific and national, that will in the end result in the greatest good to humanity.

I am glad to be able to say before this Association to-night that nowhere has the result of this diverse movement been more in evidence, or reached a higher place, than in the Province of Ontario.

The Hon. W. J. Hanna is the pioneer in this social and prison reform. His labors and his results mark a new history in the world's conception and treatment of disease, degeneracy and crime.

As the subject of psychiatry and allied subjects in all their beauty unfold themselves before us, we are struck by the fact that the development has been mainly along clinical lines; that it has concerned itself chiefly with the interpretation of psychic phenomena. Individual cases have been submitted to an exhaustive study, and a classification highly scientific has been the result.

From the therapeutic side much advance also has been made, and yet one cannot but be struck by the hopeless and mournful note everywhere given forth in connection with the treatment and

cure of the psychoses. Now in all sincerity I beg to say to the members of this Association that I consider the time has arrived when those charged with the direction of this great branch of medical science should bring this work in closer touch with university life, and, above all, with modern laboratory work, with the highest, the most exact, the most diligent research investigation.

I speak for the organic union of psychiatry with medicine, through the medium of the university and the laboratory. I am led to this point of view, to the absolute necessity of this departure, from the study of the history of medicine in other branches, and from experience gleaned at Rockwood Hospital during the past seven years.

Through many centuries the study of medicine was confined pretty generally to the study of individual types, and to the classification of the knowledge derived from these observations. In this connection it is most interesting, and for my present argument most suggestive, to turn to the writings of the great father of medicine, and to observe the rare and accurate knowledge of the most intricate human affections possessed by Hippocrates in those far-off days of Athenian glory.

His etiological and clinical description of the great plague has not been excelled in lucidity or accuracy by any writer up to the present time. The same remark can be made with reference to his work on fevers. May I also venture to say that we have made little advance on his therapeutics, because for tertian and quartan fever (malaria) he recommends the filings of steel and the chewing of a foreign bark. There is, however, a marked absence as to treatment in all his writings.

Lucid, too, is his description of epilepsy, or the Sacred Disease, as it was called, but Hippocrates naively remarks it is "no more a divine disease than any other, but has its seat in the brain, which is the organ of the senses and of the intellect, and that it is due to a cold phlegm or pituita secreted by that organ." His description of an epileptic seizure is not surpassed in clearness or thoroughness by any modern writer. "The man loses his speech and his intellect, the hands become powerless and contracted, the blood stopping and not being diffused, the eyes are distorted, froth from the lungs issues by the mouth, he foams and sputters like a

dying person, the bowels are evacuated, the patient kicks with his feet."

From the clinical side I am not sure that any modern writer exhibits in any way a wider or clearer knowledge of smallpox, scarlet fever or chorea, than that possessed by the great Sydenham. What strikes one, too, is the accuracy of description, the terseness of language, the rare power of marshaling facts, possessed by those immortals of medicine.

Now modern science is wonderfully more diverse than the science left us by Hippocrates and Sydenham. There is, too, a far-away cry from the psychiatry of Kraepelin to the psychiatry of Pinel; but let me draw your attention to the fact that plague was master of the situation till Kitasato made his wonderful discovery. Let me point out to you how little was added to our knowledge of malaria from the days of Hippocrates till Lavarán's plasmodium was brought to light, until Manson found the storehouse of malaria poison in the stomach of the *Anopheles*. Yellow fever continued its devastating sway till Camp Lazear was crowned with the flag of victory.

Here we have a group of affections that depopulated cities, laid waste great areas even on this continent, that turned the tide of commerce, that sealed as with seven seals vast regions of Africa and America, and yet they have been conquered, robbed of their terror, and soon will be regarded as historical relics of a forgotten past.

Of what avail was our knowledge of cerebro-spinal meningitis, of anterior poliomyelitis, diseases rather closely associated with our own work, till Flexner's lamp showed us the light. Death, and deformity sometimes even worse than death, were the fertile product of these diseases, but the genius of Flexner has discovered the cause and the remedy. There is nothing in the history of the world in song or fable so wonderful as the story of modern medicine. Why even syphilis, mystery of mysteries, is shorn of its historical secret. But the story would never have been told were it not for the devoted zeal of the toiler in the field of original research. The clinician could advance to a certain point, and then he read "thus far shalt thou go and no farther"; the journey was completed in the great silence of the laboratory.

Now what part is psychiatry playing in this renaissance of

medicine? As I have before mentioned, in clinical methods and therapeutics psychiatry has more than made good; but epilepsy is no more understood now than it was in the time of Hippocrates.

I speak with profound respect, and in no critical spirit, when I say that to my mind there is a wonderful lack of the spirit of laboratory research in the world of psychiatry to-day. I make a plea here to-night for an awakening to vigorous and continued effort along this line. I am aware that the answer will be "love's labor lost." Is this answer satisfactory—is it correct? Lugaro in 1909 makes this statement: "We know for example that syphilis is the remote cause of general paralysis of the insane, but when the disease makes its appearance there is no longer any trace of the active syphilis, and anti-syphilitic treatment is utterly useless." While this great teacher was writing out this statement Noguchi was already preparing the decisive answer. The pity of it all is the answer did not come from a hospital for psychiatry.

Not only has it been demonstrated by Noguchi that in paresis the living spirochætæ prey upon the cerebral cells, but others have shown that the brain cells can be reached for treatment through the cerebro-spinal fluid. This method of treatment has met with marked success in cerebro-spinal meningitis and in anterior poliomyelitis.

Experiments at Rockwood have shown that methylene blue injected into the spinal canal of rabbits is found within twenty-four hours in all parts of the cerebral tissue. How far can this principle of cerebral investigation and cerebral medication be carried, or can it be applied at all? It has already been successfully applied in general paresis, and to other diseases I have mentioned; why can it not be applied to the various psychoses?

Take, for example, dementia præcox. This disease in the main claims its victims at an early period, the most vigorous, fruitful period of human life. The subject may be a product of faulty heredity; he may have exhibited a certain precociousness or unstable nervous mechanism, but at the same time he is quite capable of reaching a creditable if not a high place in educational or industrial life. Now the faulty heredity, the unstable nervous organism, is the soil, it is true, but whence comes the seed? Can this source be reached or can the seed be destroyed before it takes root? We know from post mortem investigations that in dementia

præcox there are certain lesions of the cerebral tissues. What causes these lesions? Can well-organized and long-continued investigation throw any light on this terrible scourge? Is the end not worth the effort? And where, let me ask, can this effort be made with the best hopes of success? It is for the hospitals for psychiatry to lead the way.

What have we to offer with respect to manic depressive insanity? Of the various types and of the essential characteristics of each type we can speak in exact language and with a scientific clinical knowledge. We are also able, after careful observation, more or less prolonged, to give a fairly exact prognosis. But what have we gathered with respect to the causation of this disease? In this disease there may or there may not be a faulty heredity, and the patient's life may have been quite exempt from previous neurotic or psychic conditions.

But what is the exciting cause? Is it purely and solely psychic, or is it associated in any way with a toxic condition? Is the primary cause mental, and does this causative factor act in any way on the susceptible, responsive, sympathetic system, paralyzing its inhibitive action, and allowing the intestinal toxins to pour into the open lymphatic system; and do these toxins find a suitable habitation in the highly organized cerebral cells? Surely we would be well advised in going beyond what manic depression really is and endeavor by all available means to seek the source from whence it came.

Now I wish to draw your attention to another, and in my experience an ever-increasing group of affections, to which we have given the name "Insanity due to the various toxæmias." When I mention an ever-increasing group, I am free to admit our trend of mind may lead us to unduly enlarge a classification. In this group there may or there may not be a defective heredity, or a previous neurotic history.

This group, in the course of the disease, exhibits all the symptoms of a profound toxæmia, the coated tongue, the foul breath, an increased pulse, and in many cases a rise of temperature. Skin eruptions and superficial abscesses make their appearance, showing nature's attempt to discharge the poison. We are responsible for the nomenclature, but what have we done to dis-

cover the nature of the toxines, or the fountain from which they spring?

What success has attended our efforts with the psychoses which may be placed to the vagaries of the thyroid gland? Different views have obtained at different periods. The secretion was too copious; it was deficient; it was depraved. The thyroid was atrophied and we gave thyroid extract, or we grafted sections of thyroid gland obtained elsewhere. The gland was hypertrophied and so we extirpated the gland, or a single lobe, or a section of a lobe.

We wiggled in and wiggled out
And left the world all in doubt
Whether the snake that made the track
Was going in or coming back.

Cannot the same be said of many of the ductless glands whose functions are little known to us at present? What part do they play in the human mechanism?

Hippocrates taught that madness is due to a phlegm secreted by the pituitary body. We may yet learn that the great teacher spoke, if not with an actual knowledge, at all events with a prophetic vision.

Now for the reasons given I have satisfied myself at all events as to the urgent necessity of a well-organized, well-sustained system of research investigation in connection with the hospitals for mental diseases. Let me again quote from Lugaro: "The alienist must take an active part in the work of developing in neighboring fields of research; cultivate other sciences in order to help the progress of his own. The mere study of psychology, of disease of the mind, to which psychiatry should be reduced according to some, is a necessary study, but by itself ineffectual and sterile."

For generations we have busied ourselves with discussion after discussion on the nature of general paresis, and yet, while useful, how barren it all seems in comparison to what the last few years have brought forth through the medium of the laboratory.

I am not unmindful of the splendid work already performed by Alzheimer, Mott and Robertson, nor of the valuable contributions made by many zealous laborers on this continent, but I consider the work should be more general, more widespread; that it should exhibit a greater continuity; that every hospital for the insane

should have a well-equipped laboratory and skilled, experienced investigators. There are difficulties in the way, financial difficulties and possibly a dearth of skilled operators; but if we who are in charge take seriously to this great advance I have no fear of the issue. True, success may not be to-morrow, but I venture to say that no year will pass without adding greatly to our store of knowledge.

I have one more plea to offer, and that is, that we make an earnest endeavor to bring our hospitals into closer touch with university life. It is a fact that in the vast majority of instances the medical graduate of to-day possesses no real knowledge of psychiatry; he can expound clearly as to the "opsonic index" and the "deviation of the complement," but of the elementary principles of psychiatry he is absolutely ignorant; and going forth from his university without any appreciation of this great branch of medicine, he never acquires a taste for this study. He is quite unable to recognize the incipient stages of the various psychoses, and the case drifts on until the disease is fixed, and a life is lost.

We speak of psychiatry as a department of medicine, and yet many of the famous universities on this continent entirely ignore this subject. It finds no place in their curricula. Surely this lamentable condition should exist no longer, and the various educational bodies should see to it that this subject has a place commensurate with its importance in the life of every university. I speak from experience when I say that medical students value most highly a course in psychiatry, and that the presence of this educational influence exerts an elevating tendency on the whole hospital life.

To me these views appeal with ever-increasing force; for with a profession well educated in the practice of psychiatry, and with an enthusiastic army of investigators, may it not be that sorrow and distress may be relieved; that society and the state may be shorn of an ever-increasing burthen of human suffering and woe; that what is dark may be illumined, and that what is hidden from our view may be brought to light.

We see but dimly through the mists and vapors
 Around these earthly damps;
 What seem to us but sad funereal tapers
 May be Heaven's distant lamps.

REPORT OF THE COMMITTEE ON THE MEDICAL AND SCIENTIFIC WORK IN THE HOSPITALS OF THE UNITED STATES AND CANADA.

Your Committee on the Status of Medical and Scientific Work in the Hospitals of the Several States sent a circular to each state board and to each hospital for the insane, public and private, explaining the suggestion of our former president, Dr. W. F. Drewry, and asking a number of questions. Replies were received from about one-half of the persons or institutions addressed. Owing to the bulk of the material and the shortness of the time for report, we feel forced to give but a summary account on this occasion, but not without expressing our thanks for the readiness in giving a straightforward account on the part of so many of the members of this Association and also many others who though not members are co-workers in our common interest.

The investigation covers two points: An inquiry into the general type of organization of the care of the insane in the various states, and a specific inquiry into the working of the medical problem under those systems.

There is no doubt from the results that the general form of administration has a great deal to do with the nature and shaping of the standards.

A number of states have no special state board, but only an institution under the supervision of the governor, treasurer and attorney-general of the state or a committee of officials, or under a board of trustees responsible to the governor. A large number has a board of charities, and a growing number a state board of control; a small number have a special board or commission in lunacy or board of insanity, with or without powers which would influence the standards of work. There is not the slightest doubt that, so far, the states with a special commission make, with few exceptions, the best showing in the standards of the medical work of the individual institutions. Administrative excellence is, beyond doubt, the first condition for lasting success; but a thorough grasp on the modern methods and ideals of work in the governing body,

be it a commission or a board of control, is equally essential to give the patient, the people and the taxpayers the returns they have a right to ask for. Massachusetts has the merit of having formulated the most farsighted general policy, without, however, having attained uniform standards in its institutions. New York and in part Illinois have furnished most evidence of systematic work and a creation of standards through the organization of post-graduate courses for their physicians, while in the other states and in Canada the standards are more individual for each hospital.

The reports of the hospitals show a decided but by no means general growth away from the asylum conception towards the hospital idea for the cases that need hospital care, and a differentiation for the tubercular and the criminal, and in part for the epileptics, and the idea of colonies for those who can work and live as part of a colony.

The incompleteness of the returns will not justify tabulation according to states until all the data are available. But the number of hospitals with special provision in these directions is decidedly growing, to judge from the reports of special provisions now in construction, especially for the tubercular, for reception wards and for infirmaries. The criminals mostly go to special institutions or at least have special buildings wherever possible. Epileptics in a few places have special wards and there is much interest in the colony treatment. Farm colonies are somewhat on the increase but evidently more an issue of agriculture than one of giving the best care and the most normal life to the greatest number of patients, in a manner praised in connection with the Wisconsin system of county institutions of not more than 150 cases.

The question of care for acute and recent cases no doubt is most closely connected with that carried by our question 4, the methods of organization of the medical work of the physicians and the number of acute and chronic and special types of cases assigned to each; the type of record kept, the methods of supervising the medical work, the form and scope of staff meetings, the provisions for the current laboratory work and the autopsy work and its extent. Unfortunately these questions received the most uneven replies, but not without giving the impression that the extent of specific replies was closely connected with the extent

of real attention these matters received in the actual working of the hospital. It naturally is a point on which no uniformity must be expected; but the question, "What is aimed at?" and "How is the aim reached?" is one that must be close to the heart of every physician.

From the ordinary "admission wards" to the reception building for treatment and observation there are all degrees of provisions. The most deplorable feature of most institutions is the fact that they do not provide a sufficient number of small divisions for the excited acute cases, as part of the admission and treatment wards and distinct from the division for the more chronic excitements. Most of the excited cases are either directly or as rapidly as possible sent to the training school of asylum excitement, and this will be true until excitement will be looked upon as a temporary incident and not as a decisive characteristic for the part of the institution in which the patient should be placed; for indeed even the so-called chronic excitements lose the old-time characteristics if handled with less unnatural restriction, as the experience in colonies shows.

In most hospitals with enough admissions a special admission ward is the center of examination of patients. Concord, N. H., solves the problem by having a special examination room in which the patient is kept in bed until transfer to a special division is decided upon. This is an excellent plan in smaller hospitals with few admissions, as it prevents a premature immergence of the new patient into the routine of a more or less large group of cases distracting or levelling down the attention of the physician.

The medical work proper varies greatly, but is decidedly in the ascendancy. In most places the number of physicians is obviously too small to do the work so that the practical demands of modern psychiatry could be satisfactorily attended to. By this I mean a thorough understanding of the condition of those under treatment, including the more definitely medical issues of diagnosis, planful treatment and recording of the experience and results gained; a knowledge of the conditions under which they became sick, a clear definition of the modifiable factors of their condition or indication for treatment and expectations, the conclusions as to what preventive work should be undertaken in the house and community from which the patient comes, and what

should be done to pave the way for discharge and after-care, prevention of relapses and eugenics.

Only a very small number of hospitals have sent records of cases showing how these issues are actually handled. These few clearly indicate a great advance in the amount of attention given the individual case as a medical and practical problem. The old-fashioned routine blanks have given place to more individualizing accounts, and beyond the more formal excellence there is growing evidence of that sound, practical perspective which shows in a practical grasp on the case, indications for medical activity and readiness for a discussion in staff-meetings, and the medically practical and sensible turn of these discussions. It will be a great day when in each hospital there will be clearness about the aims of the record, about the practical attitude towards the facts to be met and the theoretical conceptions of psychiatry.

The day is past when we expected to get a comprehensive idea of the general psychiatric attitude from the so-called classification in use. The medical attitude and medical work can only be judged by a review of the actual work done of the problems taken up with the individual cases and the sense shown in grouping the facts in a useful order.

In most hospitals the distribution of the physicians is plainly determined by the number of the staff, tradition, and the types of the building rather than by the number and types of admission and types of cases requiring individual attention; but the interest shown in staff-meetings, the habit of seeing that every physician takes his quota of new cases and presentations to the staff is bound to have its effect. The way this is attained seems to me to be arbitrary and formal in many places, but it represents a step away from monotony and indifference.

Special laboratories exist in many hospitals, but their use differs greatly. In some places they are mainly a place for work that should really be done in the clinical services; in others a proper balance is attained between the autopsy work and its correlation with the clinical problems, and between the matters of clinical work which require laboratory facilities (serum work, etc.). The day is not so far off when each well-organized clinical service will have its own simple but sufficient laboratory corner, when the habit of the physicians to consider the general

medical office their place of work will be finally exploded and exchanged for having a place of work in the wards in the midst of ward work; and when the autopsy laboratory will be a center mainly for the more highly specialized work.

A recognition of the *varieties* of medical work required in each hospital shows especially in the better definition of the work in the more chronic divisions. The chronic wards are centers not for less medical work, but for different medical work. The problem of therapeutic employment, as illustrated by the Rochester State Hospital, N. Y., shows clearly one direction of the work; also the growing prominence of the neurological problems in the infirmaries.

The more clearly it is possible to define the varieties and amount of medical work needed in an institution, the more clearly can the demand for enough physicians be put before the authorities governing the purse-strings. The more closely the superintendent brings his trustees into touch with the actual medical workers, the smaller will be the difficulty about getting what the patients and the organization of the work need. The excessive distance between hospital and boards of control cannot be bridged over in any other way.

The Nursing Problem.—The training schools for nurses are growing in number, but the actual results are difficult to size up and the rapid changes in the nursing force (up to over 100 per cent annually in several institutions, and 40-50 per cent on an average) give a picture of the inadequacy of the present conditions.

One of the informants says very justly, "I have found that many other hospitals with training schools would do better work if they abandoned them. A fair attendant is often spoiled by inefficient training. I have a high regard for the graduates of some of the schools, but our region is full of attendants whose chief asset is a diploma and a large hat."

As a matter of fact training in many of our hospitals has reached a fair degree of excellency, especially where some additional training in neighboring general hospitals can be enforced.

The provisional training of the attendants who do not take the full course for trained nursing would nevertheless seem to deserve a more careful study. There are a certain number of

helps which give a newcomer a safer footing, especially if he is given a certain inside knowledge of the mental state of the patients, a realization that the patient's attitude is not a mere product of disease and craziness, but an effort to right himself under his morbid conditions, that it is best to be helpful and not to disturb by reasoning and argument. Another point is some help concerning the handling of states of excitement and violence. Some knowledge in this direction will make the attendant less suspicious and fearful of harm and more likely to learn and less unnecessarily interfering.

In one respect the growing extent to which female nurses are put in charge of hospital wards for men can be looked upon as an index of the tone of care vs. mere supervision. Nearly one-half of the hospitals which reported have adopted the method for admission wards and infirmaries. One informant protests against the use of married couples. There is no record of the management by trained female nurses having been given up again.

The problem of restraint receives answers of varying value. No restraint is claimed in a large number of hospitals. In other places the policy is described as one of judgment, discretion and common sense, not adhering to any arbitrary rule which might work to the detriment of the patient. Accurate figures are given in but few reports.

The weakest spot is no doubt the lack of work reaching beyond the hospital walls. This is due to a very defective policy of restricting of the states and communities. New York to-day is in the lead with real attempts not only of after-care but of prevention through the State Charities Aid Association. Effective work in this line is hardly to be expected before we obtain a policy of small and manageable hospitals and hospital districts not for whole states, but for smaller units of population.

The care of the patients pending commitment and the after-care, *i. e.*, the attention to the conditions to be handled outside of the hospital walls, probably come closest to a broader interest going beyond mere care-taking and mending. So far very few states have any organized work in this direction; moreover, most states look upon admission to hospitals for the insane as a matter to be decided not by physicians, with a merely *occasional* appeal to legal authorities, but by judicial authority.

It is suggested that a few of the reports be published in toto, and that the hospitals be encouraged to complete the inquiry for a comprehensive report of the present status of practical psychiatry in this country to be worked out in the course of the coming year.

ADOLF MEYER, *Chairman.*

NOTE.—Unfortunately the reports furnished as examples, together with the original report, were lost by the stenographer of the Denver meeting. Through chance this copy of the report came to light, and is herewith offered to the Association.

MEMORIAL NOTICES.

DR. GEORGE H. KNIGHT.

Connecticut has lost one of its most able citizens. Dr. Geo. H. Knight served the state as Superintendent of the Connecticut School for Imbeciles for twenty-seven years. His tragic death Oct. 4, 1912, on the platform at the close of a political speech, as he was about to be nominated for Congress, cut short an increasingly useful and broadening career.

Dr. Knight was born Nov. 24, 1855, at Lakeville, of very old and noble New England stock. His father, Dr. Henry Knight, a prominent country practitioner, with true pioneer spirit founded and for years maintained at great personal and financial sacrifice the first and only school for imbeciles in Connecticut. Reared in the atmosphere of this charitable undertaking, he passed a useful boyhood at school and on the farm. He entered Yale University in the class of 1887 and remained there two years, when he attended the University Medical College, receiving his degree in medicine in 1880. He at once became Superintendent of the State Institute for Imbeciles at Baribault, Minn. At the death of his father in 1885 he returned to take the superintendency of the Connecticut school.

During his continuous and faithful service of twenty-seven years the institution grew and prospered. Son, like father, gave freely of his money and his energy. An evidence of the appreciation of their unselfish devotion may be found in the fact that the state was willing to appropriate to their uses over \$107,000, accepting as a security only a certain lien on the property in case at any time it should be used for other purposes. His life-long and intimate association with these unfortunate defectives eminently fitted him for his duties. Added to this, he possessed a certain instinctive human interest in the individual welfare of "the children," as he was wont to call them. Only one who has the opportunity to watch his life among them can appreciate his

fatherly attitude and the true warmth of his nature. They were truly his children, and none were ever sent away from the family because death of parents or friends rendered them dependent.

During his lifetime he witnessed great advance in the scientific conception of these diseased conditions, but he did not need the finer Binet-Simon tests or close questioning to give him correct knowledge of the real needs of his patients. His schools were well equipped and his extensive farm quite adequate to bring out their capacity for useful knowledge. His simple and plain cottages were quite sufficient. He did not believe in palatial structures, costing more per capita than the average Connecticut farmer was worth.

He was among the first to grasp the gist of the real problem and to recognize the importance of segregation of the defective classes. This led to his larger work and made him a leader in legislative measures looking to prophylaxis. His power was at once recognized in the state legislature. In 1907 he was chairman of the Committee of Public Health and Safety and in 1909 chairman of the Committee on Humane Institutions. His appreciation of the influence of epilepsy in this problem made him a strong factor in securing the Connecticut Colony for Epileptics and in the attempts to secure a law prohibiting the marriage of epileptics.

He was married Sept. 16, 1879, to Kate M. Brannon of New York City. There was one child, Gertrude M. Knight.

As a fitting recognition of distinguished work and service he received an honorary degree of M. A. from Yale University in 1902.

ALLEN ROSS DIEFENDORF, M. D.

DR. THOMAS J. MITCHELL.

Dr. Thomas J. Mitchell was born in Limestone County, Ala., July 4, 1834, his parents being Cullen and Mary T. (Sykes) Mitchell.

His early youth was spent in Alabama; he received his literary education at the University of Alabama, and was granted a medical diploma from the University of Pennsylvania in 1852.

After graduating, he moved to Jackson, Miss., and began the practice of medicine, but in 1856 he took a post-graduate course in Europe, spending a year there. Returning to Mississippi, he was actively engaged in the practice of medicine until 1862, when he entered the Confederate service as surgeon to the 39th Mississippi Regiment.

After the war he returned to Jackson, Miss., to take up private practice again, and was so engaged until 1878, when he was appointed Superintendent of the Mississippi State Hospital, which position he held until May, 1910, when he retired, having served the state continuously for thirty-two years.

In 1858 Dr. Mitchell was married to Miss Annie McWillie, the daughter of Ex-Governor McWillie of Mississippi, and to this union were born five daughters and three sons; of these, two sons and two daughters survive. His wife and the mother of these children was called from life in 1878.

After retiring, he lived quietly in Jackson, surrounded by his children and friends, who did everything to make the shadows of life fall quietly and pleasantly for one who had lived so nobly and served the afflicted so faithfully, and on September 16, 1912, his spirit quietly returned to the God who gave it.

Dr. Mitchell was a member of the Mississippi State Medical Association, and was at one time president of the Association. He was also a member of the American Medical Association and the American Medico-Psychological Association. He was a close student and took a keen interest in everything pertaining to his profession, often contributing valuable articles to the Medical Association as well as writing for medical journals.

Owing to his modesty and retiring disposition, those only who knew him best appreciated his worth most.

The first years of Dr. Mitchell's institutional work were under great disadvantages. When he assumed charge of the asylum, the state was just emerging from the chaos resulting from the misrule of the reconstruction period. The state was all but bankrupt, and appropriations for the asylum were not sufficient to allow him to keep abreast with more fortunate institutions; yet, with all of these disadvantages, he made a hard, but in the end a successful, fight for those intrusted to his care.

Beginning with what could justly be termed an alms-house, he left as a heritage a most magnificent hospital for the insane.

Dr. Mitchell was one who held to the traditions of the old South, and was of that type known as the ante-bellum "Southern gentleman." He was courteous, courtly, yea, princely in manner and deportment, and his strict sense of honor and duty to his trust merited the continued and long confidence of the people he served so well.

He was a brilliant conversationalist, replete with wit and humor, and his mind was a veritable store-house of knowledge.

He was at his best when in a reminiscent mood, and this reminiscence gave his friends views of his life in its many phases, the first part thereof, which dealt with his brilliant care-free youth: the latter years of his splendid practice; the long, hard years of his beloved land's sore struggle for what she deemed her right; the longer harder years of her humiliation, when, as before, he proved one of her truest soldiers; nor ever made complaint of the burdens which the times imposed: the almost two score years of his devotion to the healing and the solacing of the state's unfortunates.

I count myself fortunate in having been associated with Dr. Mitchell, both as a friend and confrere, and am in position to appreciate his great work.

But what I love most is the memory of that sweet Christian, charitable character that he so fully exemplified in his daily life, and he was truly an exemplar of all that goes to constitute a Christian gentleman.

He was for many years one of the leaders in the Episcopal church and was always active in all good works.

J. M. BUCHANAN, M. D.

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